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M E M O R A N D U M

TO: John Mitnik, Chief, Engineering and Construction Bureau
Paul Linton, Administrator, Water Control Operations Section

FROM: SFWMD Staff Environmental Advisory Team

DATE: August 18, 2015

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Stages in Lakes East Toho, Toho, and Kissimmee-Cypress-Hatchineha (KCH) are at or close to their regulation schedule lines; East Toho and Toho are within their ascension rate targets (<0.5 feet in the last 14 days); KCH has slightly exceeded 0.5 feet in 14 days (0.57 feet/14 days). With KCH close to the summer high pool line and S-65/S-65A discharge at ~1800 cfs, discharge may be increased to follow the wet season standing recommendation (up to 300 cfs/day), or more quickly if needed as stage rises above the regulation line. On Sunday, discharge at S-65 averaged 1490 cfs and at S-65A 1630 cfs. Discharge at S-65E averaged 1550 cfs over the past week. Tuesday morning discharges: S-65 ~1850 cfs; S-65A ~1800 cfs; S-65C ~1660 cfs; S-65E ~1730 cfs. Kissimmee River dissolved oxygen concentration averaged 3.84 mg/L over the past week and 3.00 mg/L on Sunday. Kissimmee River mean floodplain depth is currently 0.95 feet.

Lake Okeechobee is at 12.48 feet NGVD, having risen 0.22 feet over the past week, and remains in the Beneficial Use Sub-band. Satellite imagery indicates low to moderate bloom conditions in most of the Lake's nearshore zone and extending out into the pelagic zone in the north and southwestern regions.

Over past week, total freshwater inflow to both estuaries was dominated by local basin runoff, averaging 910 cfs to the St. Lucie and 3452 cfs to the Caloosahatchee. In the St. Lucie Estuary, salinity was in the good range for adult oysters. In the Caloosahatchee Estuary, salinity continued to be in the good range for adult oysters at Shell Point and Sanibel and in the fair range at Cape Coral. Salinities were also in the good range for tape grass in the upper-Caloosahatchee Estuary, and are forecasted to remain so over the next two weeks, even with no flow through S-79.

Rainfall was moderate to high last week, ranging from a high of 4.3 inches in WCA-3B to 1.27 inches in WCA-3A. Water levels are below average for the wet season. Stages generally rose within the WCAs and Everglades National Park (ENP) this past week, but increased water is needed throughout the system. The El Niño position analysis for the WCAs indicates that water levels may remain very low through the wet season and upcoming dry season, which means ongoing problems in ENP (drought) and Florida Bay (salinity), as well. The 365-day sum of creek inflows to Florida Bay has dropped to 81,844 acre feet, the lowest they have been since the flow gauges in the creeks were installed in 1996.

Weather Conditions and Forecast

Afternoon showers and thunderstorms focused west. Shower activity is currently developing along the east coast and southeasterly steering winds should move activity inland and over western areas this

afternoon. Some drier air is forecast to move into the area Wednesday so expect less thunderstorm coverage for a couple of days with activity focused over the interior Wednesday and west Thursday. Daily thunderstorm coverage should increase a bit Friday and Saturday and be focused west and north.

KISSIMMEE BASIN

Kissimmee Basin Rainfall

The Upper Kissimmee Basin received 2.81 inches of rainfall in the past week and the Lower Basin received 2.32 inches (SFWMD Daily Rainfall Report 8/17/2015).

Upper Kissimmee Basin

Stages and departures in the Kissimmee Chain of Lakes (KCOL) are shown in Table1.

Table 1. Departures from KCOL flood regulation (F) or temporary schedules (T, A, or S) (feet NGVD). Discharge and stage data are provisional real-time data from SFWMD OASyS DualTrend; reported values are averages through midnight of the Sunday prior to the report date unless otherwise specified.

Report Date: 8/18/2015							Sunday Departure (feet)						
Water Body	Structure/Site	Discharge (cfs), week's average**	Stage Monitoring Site***	Lake Stage (feet)	Schedule*	Regulation (R) or Target (S or T) Stage (feet)	8/16/15	8/9/15	8/2/15	7/26/15	7/19/15	7/12/15	7/5/15
Lakes Hart and Mary Jane	S62	178	LKMJ	60.0	R	60.0	0.0	-0.2	0.2	-0.1	0.0	0.0	-0.1
Lakes Myrtle, Preston, and Joel	S57	42	S57	61.2	R	61.0	0.2	-0.2	0.0	-0.2	-0.2	0.0	-0.1
Alligator Chain	S60	27	ALLI	63.2	R	63.3	-0.1	-0.3	-0.1	-0.2	-0.1	-0.2	-0.2
Lake Gentry	S63	87	LKGT	60.9	R	61.0	-0.1	-0.2	0.0	-0.1	0.0	0.0	-0.1
East Lake Toho	S59	503	TOHOE	56.6	R	56.5	0.1	0.0	-0.1	-0.3	-0.5	-0.5	-0.9
Lake Toho	S61	1070	TOHOW	53.4	R	53.5	-0.1	-0.1	0.1	-0.3	-0.3	-0.4	-0.6
Lakes Kissimmee, Cypress, and Hatchineha	S65	1557	LKISSP, KUB011, LKISSB	51.1	R	51.0	0.1	-0.2	-0.5	-0.7	-1.0	-1.2	-1.6

* T = temporary schedule, R = USACE flood control schedule, S = temporary snail kite schedule, A = projected ascension line, N/A= not applicable or data not available.

** Seven-day average of weighted daily means through Sunday midnight.

*** Names of in-lake monitoring sites and structures used to determine lake stage; if more than one site is listed, an average is reported.

Lower Kissimmee Basin

Discharges and stages at Lower Basin structures are shown in Table 2. SFWDAT depth maps for the Phase I restoration area are shown in Figure 11. Kissimmee River floodplain stages at selected stations are shown in Figure 12.

Table 2. Mean weekly discharge at S-65x structures, and mean weekly Phase I area river channel dissolved oxygen and floodplain mean water depth. Discharge and stage data are provisional real-time data from SFWMD OASyS DualTrend; reported values are averages through midnight of the Sunday prior to the report date unless otherwise specified.

Report Date: 8/18/2015

Metric	Location	Sunday's 1-day average	Weekly Average**								
			8/16/15	8/9/15	8/2/15	7/26/15	7/19/15	7/12/15	7/5/15	6/28/15	6/21/15
Discharge (cfs)	S-65	1489	1557	1125	250	145	447	513	314	352	395
Discharge (cfs)	S-65A	1631	1488	1030	345	284	411	597	277	273	296
Discharge (cfs)	S-65C	2144	1710	905	752	682	762	958	430	435	478
Headwater stage (feet NGVD)		35.8	35.4	34.8	34.2	34.2	34.2	33.9	33.4	33.3	33.4
Discharge (cfs)	S-65D****	2530	1759	1059	881	774	872	1076	480	515	588
Discharge (cfs)	S-65E	2326	1551	885	724	550	652	870	325	361	415
DO concentration (mg/L)***	Phase I river channel	3.00	3.84	3.54	4.30	4.85	4.90	5.15	7.26	8.09	7.24
Mean depth (feet)*	Phase I floodplain	0.95	N/A	1.09	0.51	0.44	0.47	0.68	0.22	0.19	0.25

* 1-day spatial average from South Florida Water Depth Assessment Tool (SFWDAT).

** Seven-day average of weighted daily means through Sunday midnight.

*** DO is the average of KRBN and PC62 through May 21,2015; is for PC62 only for May 22-June 1; and is the average for PC62 and PC33 starting June 2..

**** S-65D discharge combines discharge at S-65D, S-65DX1, and S-65DX2

***** 1-day spatial average from field measurements in Pools A and BC

N/A Not applicable or data not available.

DATA ARE PROVISIONAL

Water Management Recommendations

Kissimmee Basin Recommendations and Operational Actions

Date	Recommendation	Purpose	Outcome	Source
8/18/2015	No new recommendations.			
8/11/2015	No new recommendations.			
8/4/2015	No new recommendations.			
7/28/2015	No new recommendations.			
7/14/2015	No new recommendations.			
6/30/2015	No new recommendations.			
6/23/2015	No new recommendations.			
6/16/2015	No new recommendations.			
6/9/2015	No new recommendations.			
6/1/2015	For S65/65A maintain 300 cfs as long as stage is above 48.5 ft. When stage approaches 50.5 ft begin transitioning to 1400 cfs using the rampup/rampdown guidelines in standing recommendation.	Allow KCH lake stage to rise	Implemented	KB Operations
5/29/2015	2015 KB Wet Season Standing Recommendations provided to Operations Control	Comprehensive wet season guidance	Implemented	KB Operations
5/26/2015	No new recommendations.			
5/19/2015	No new recommendations.			
5/12/2015	No new recommendations.			
5/5/2015	No new recommendations.			
4/7/2015	No new recommendations.			
3/31/2015	No new recommendations.			
3/24/2015	No new recommendations.			
3/17/2015	No new recommendations.			
3/9/2015	No new recommendations.			
3/4/2015	No new recommendations.			
2/23/2015	No new recommendations.			
2/17/2015	No new recommendations.			
2/10/2015	No new recommendations.			
2/3/2015	No new recommendations.			
1/27/2015	Starting today, follow a new SK recession line for KCH, which will be drawn from today's stage to regulation stage on March 1.	Snail kite recession in KCH	Implemented	

KCOL Hydrographs (through Sunday midnight)

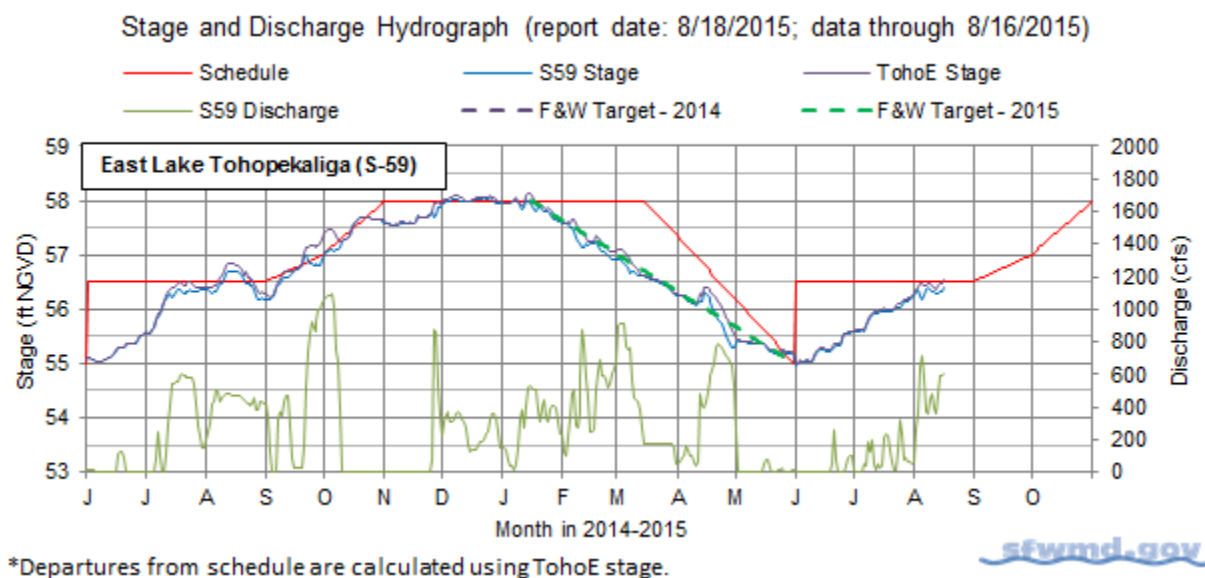


Figure 1.

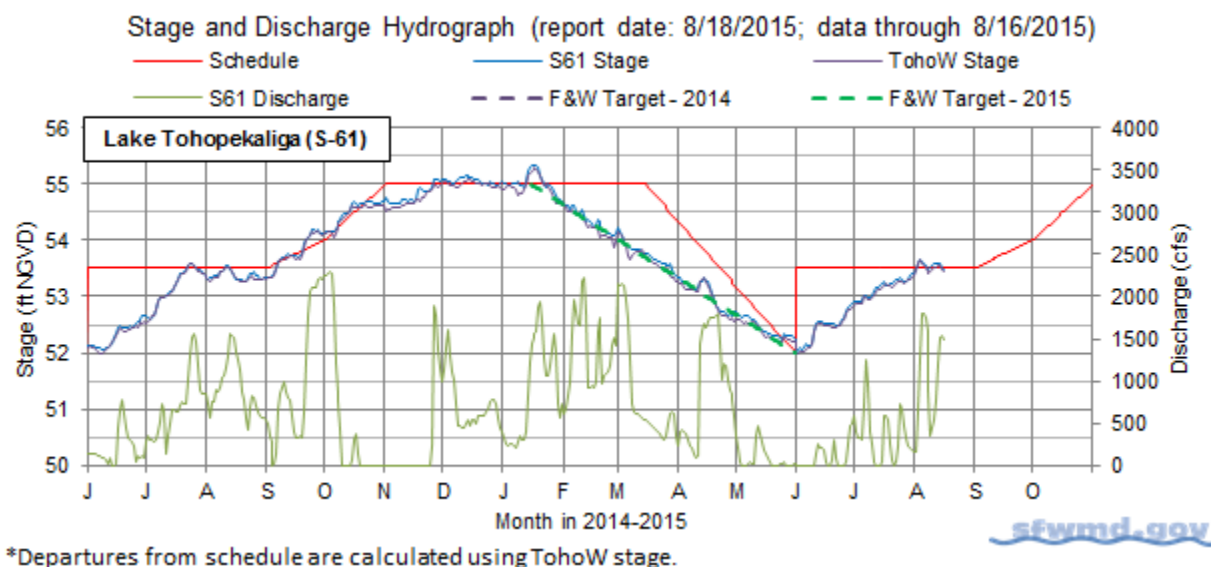


Figure 2.

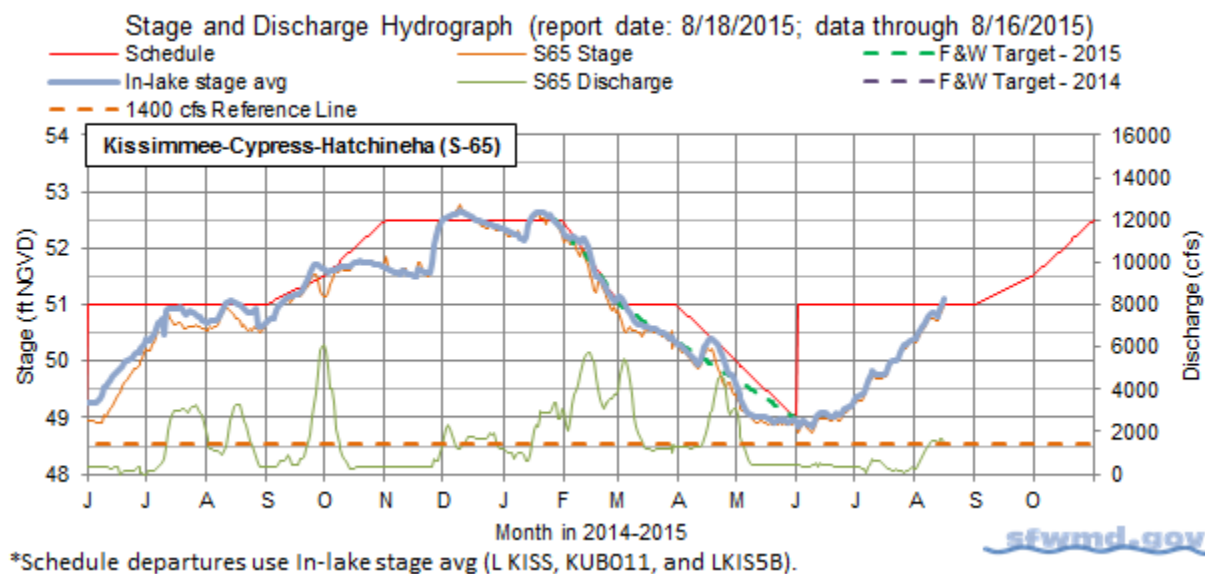
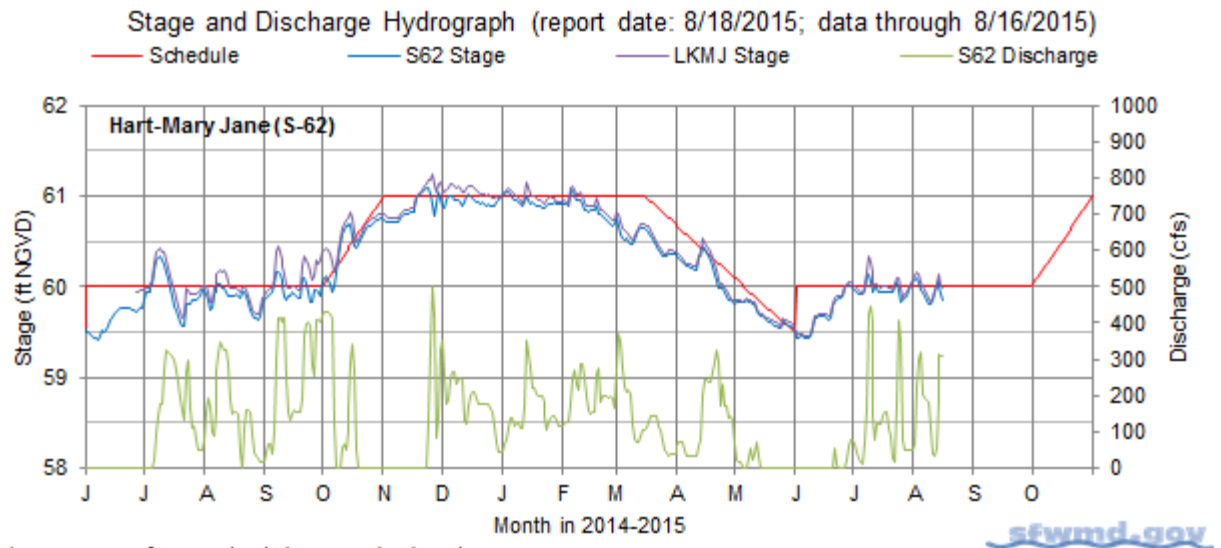
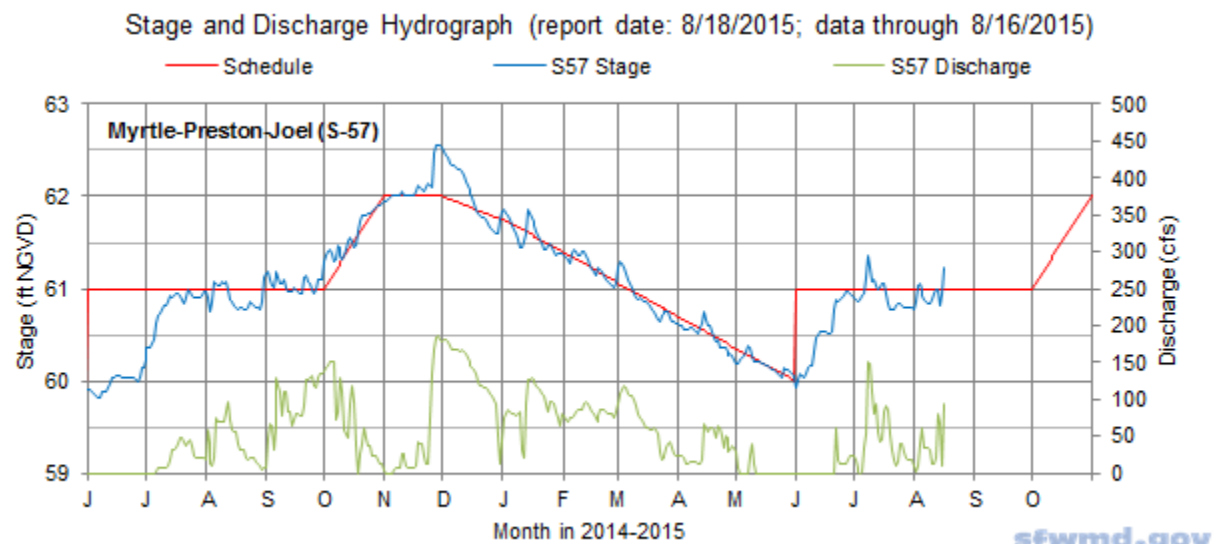


Figure 3.



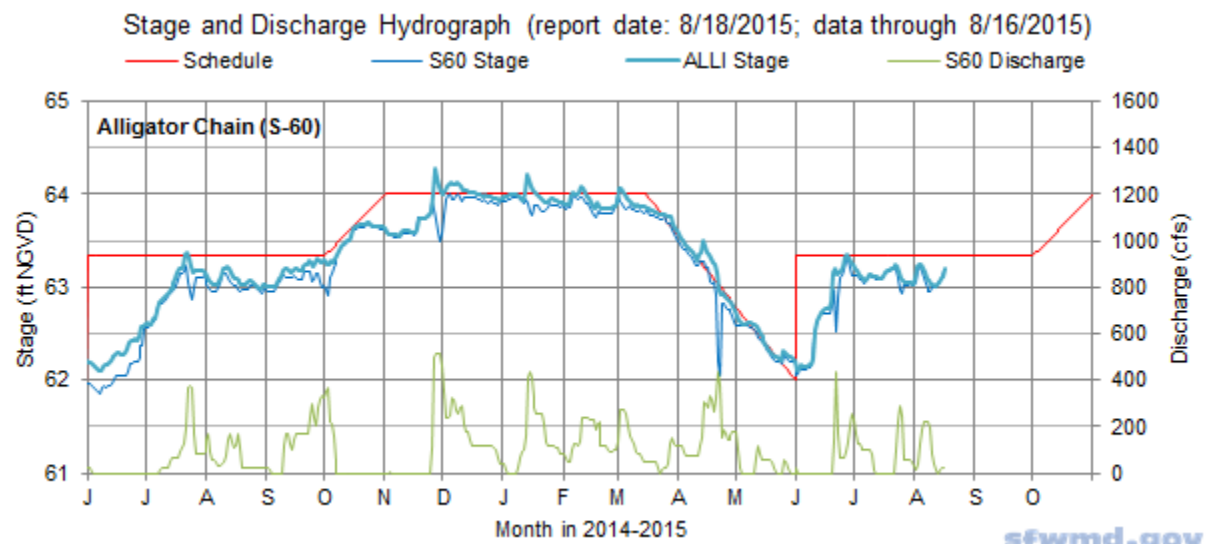
*Departures from schedule are calculated using LKMJ stage.

Figure 4.



*Departures from schedule are calculated using S57 stage.

Figure 5.



*Departures from schedule are calculated using ALLI stage.

Figure 6.

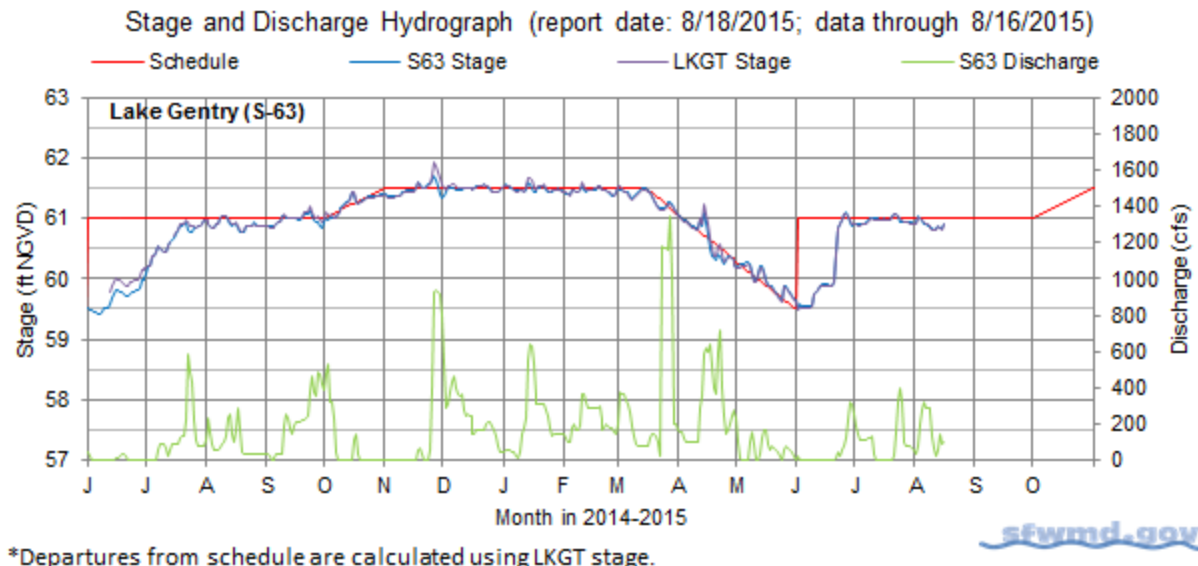


Figure 7.

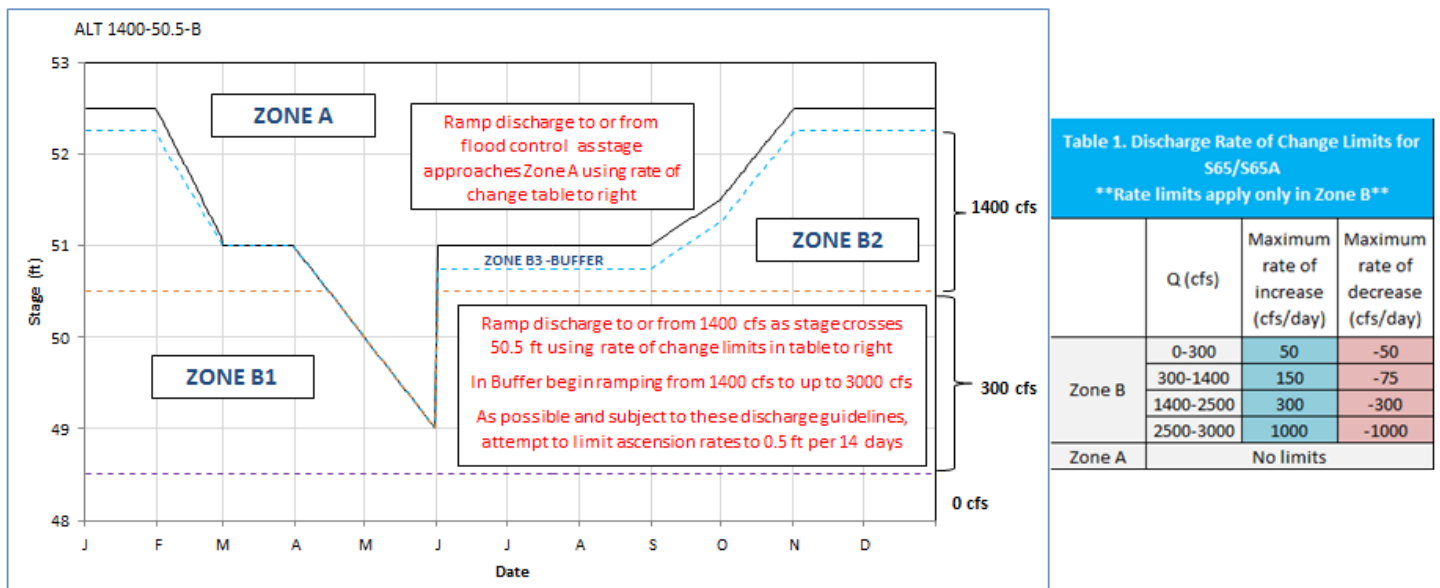


Figure 8a. Final S65 operational plan for Wet Season 2015.

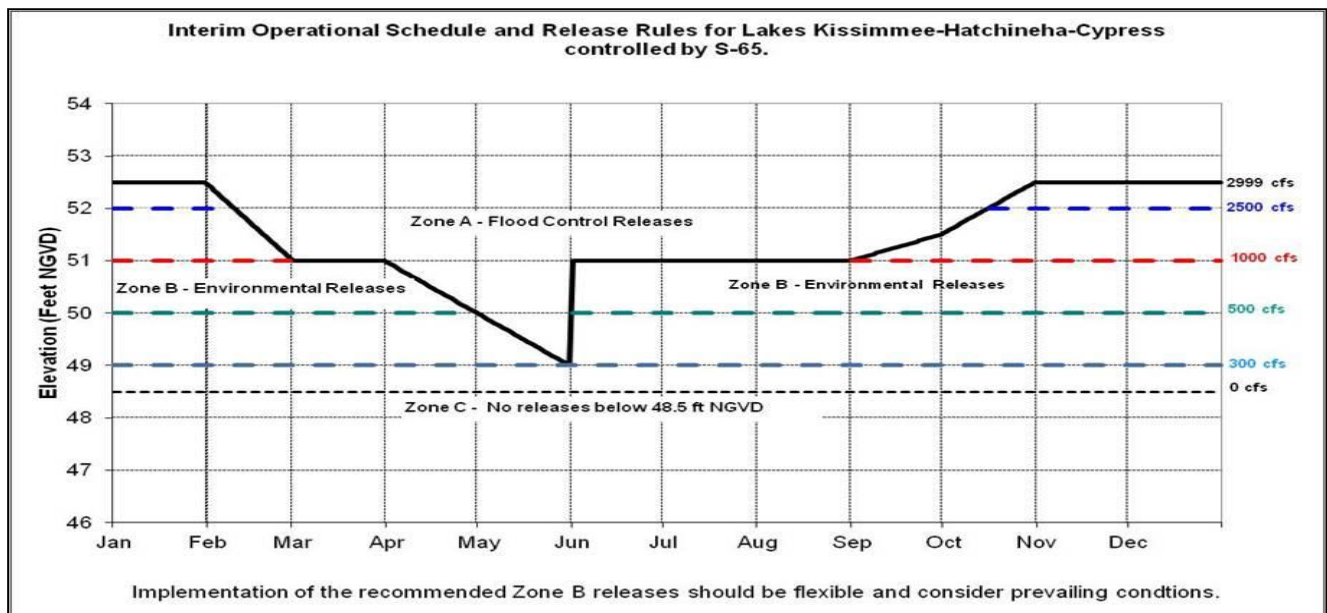


Figure 8b. Interim operations schedule for S-65. The discharge schedule shown to the right has not been used in recent years or in Wet Season 2015.

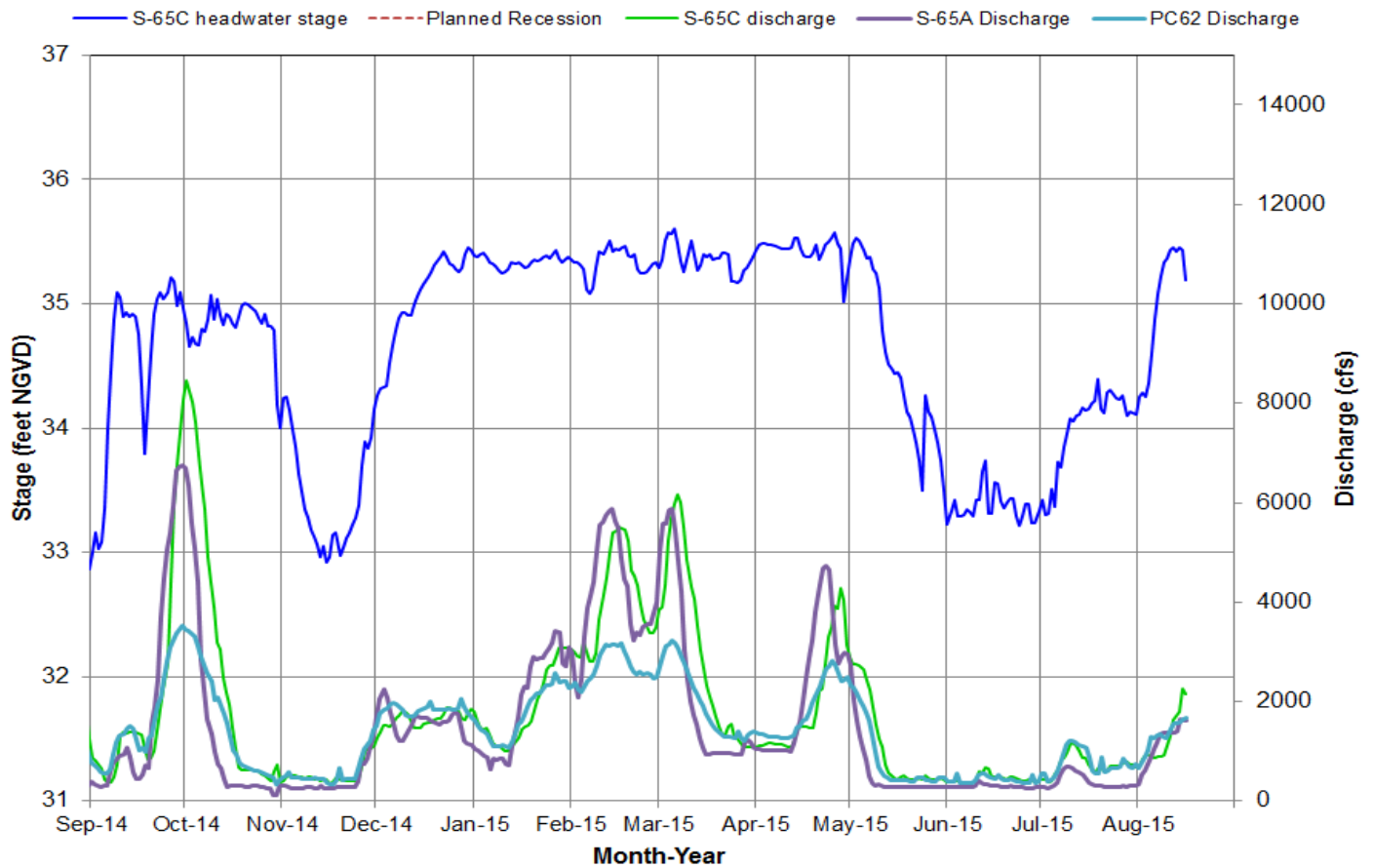


Figure 9. S-65C headwater stage in relation to discharge at S-65C, S-65A, and PC62.

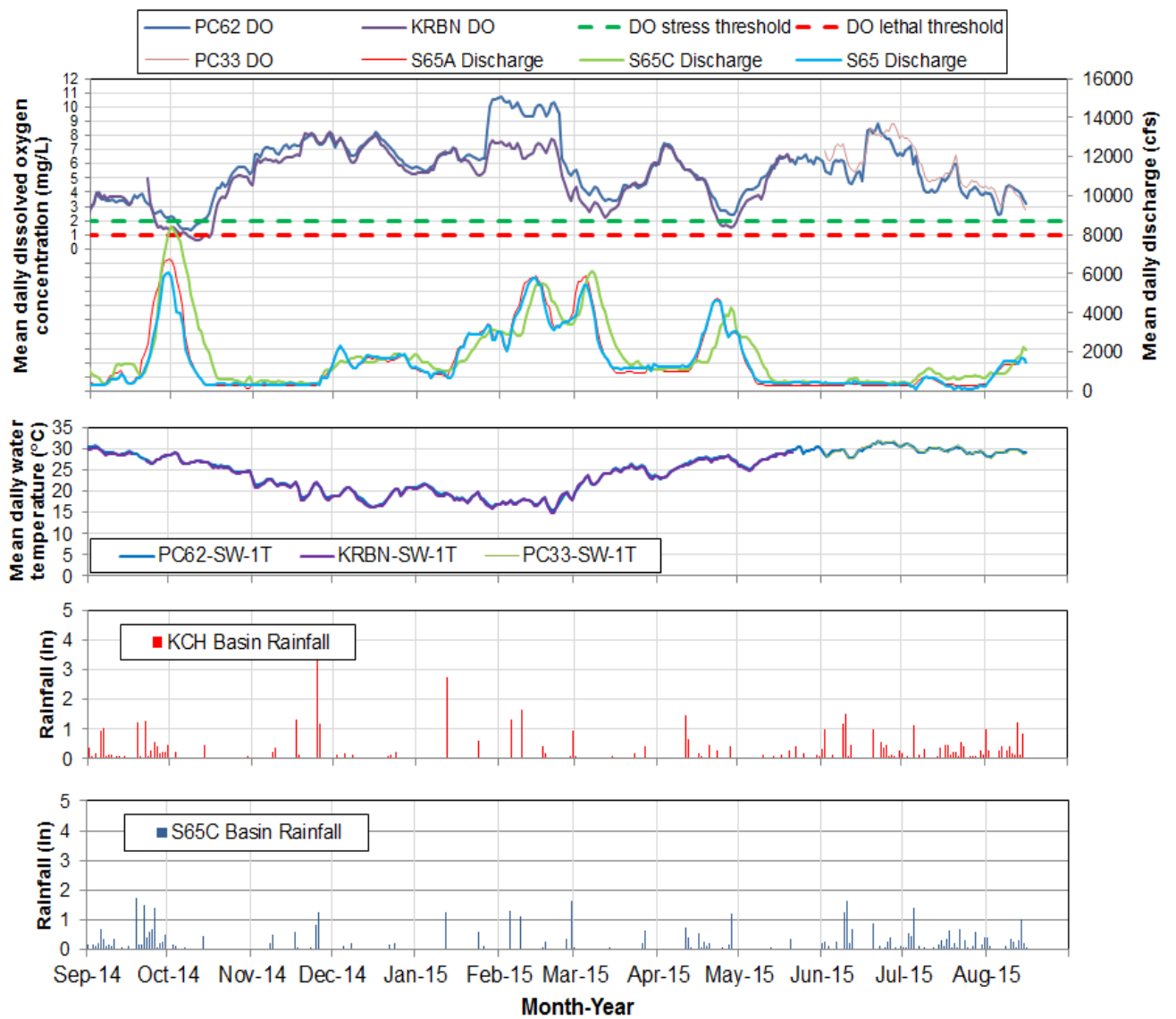
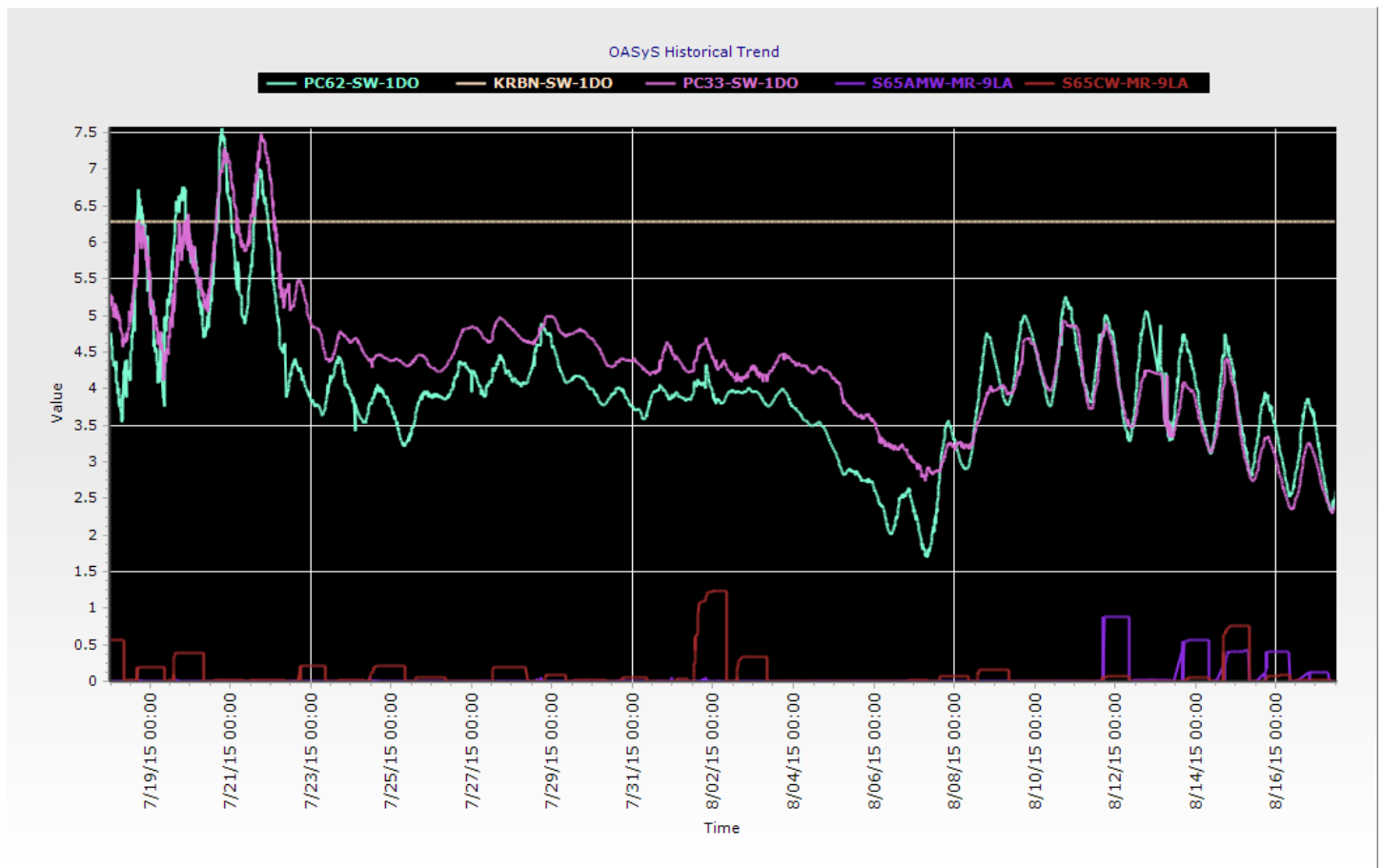


Figure 10. Mean daily DO, discharge, temperature and rainfall in the Phase I river channel.



Insert A. Phase I river channel DO (measured at 15 minute intervals) and rainfall at S65A and S65C.

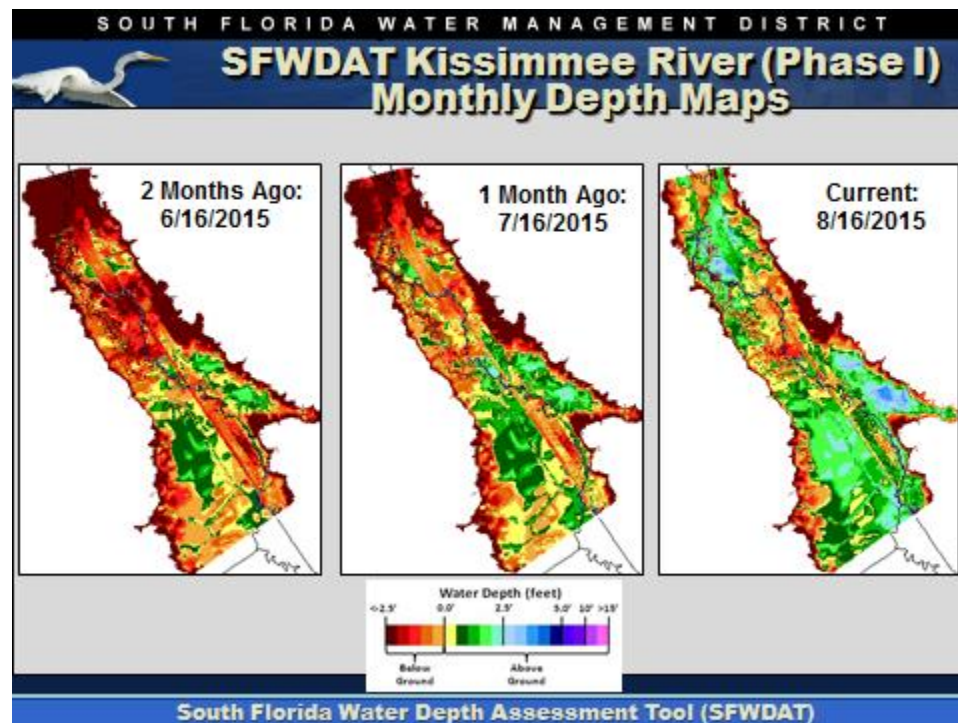


Figure 11. Phase I area floodplain water depths for this week, one month ago, and two months ago. Note that the WDAT color-coding has been modified to accommodate greater water depths; these maps are not directly comparable to Kissimmee Basin WDAT maps published prior to Jan. 16, 2012.

Kissimmee River Hydrographs

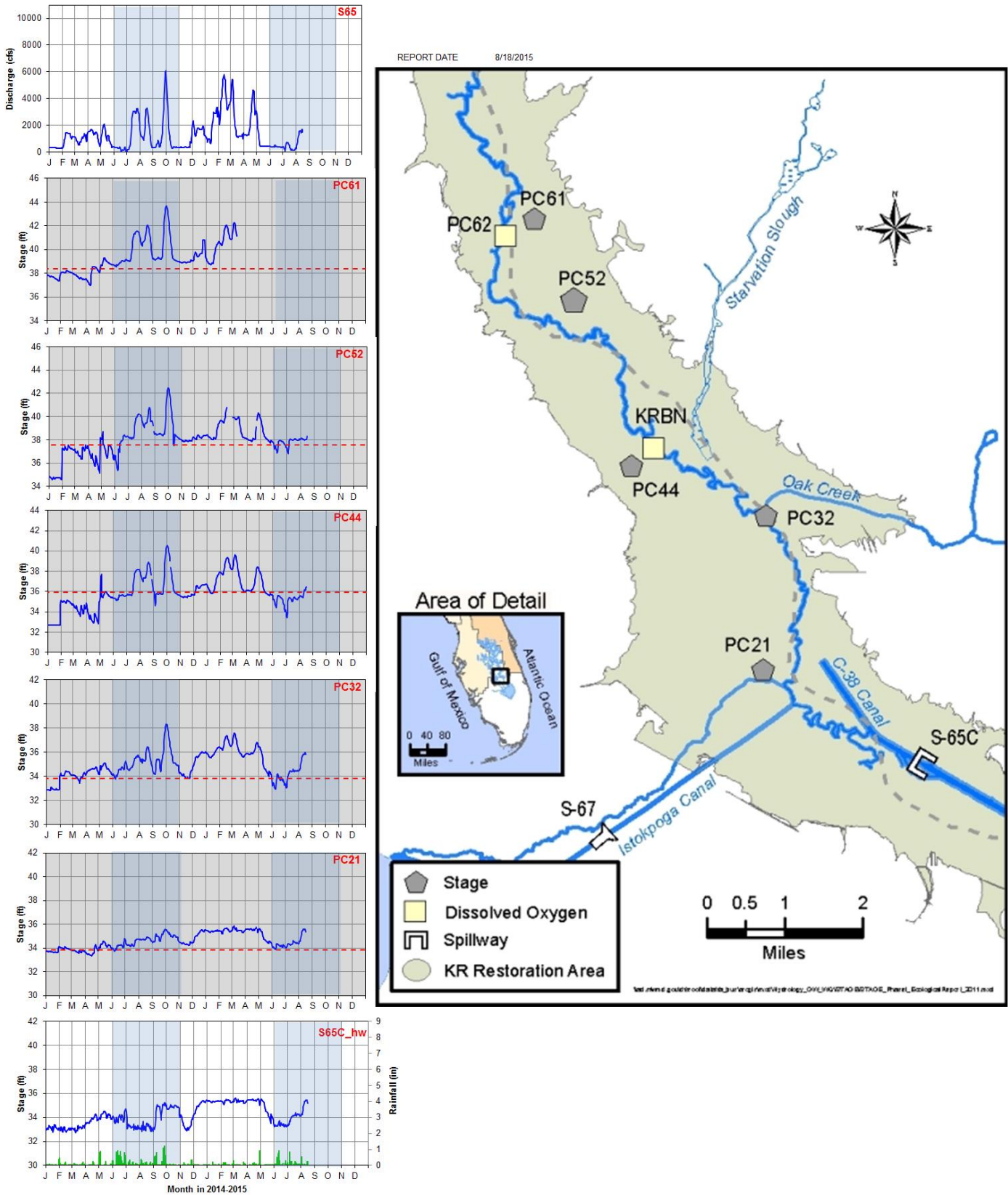


Figure 12. Discharge at S65, stages at five monitoring stations in the Phase I area of the Kissimmee River floodplain, and headwater stage at S65-C since January 1, 2013. The most recent data (~2 weeks) are provisional real-time data from SFWMD DualTrend; previous data are from SFWMD DB-HYDRO (validated). Dashed lines are ground elevations.



Figure 13. The Kissimmee Basin.

LAKE OKEECHOBEE

According to the USACE web site, Lake Okeechobee stage is at 12.48 feet NGVD for the period ending at midnight on August 17, 2015. Lake stage increased by 0.22 feet over the past week. The Lake is now 0.49 feet higher than it was a month ago and 2.00 feet lower than it was a year ago (Figure 1). The Lake is in the Beneficial Use Sub-band. (Figure 2). According to RAINDAR, 2.06 inches of rain fell directly over the Lake during the past seven days. Similar or greater amounts fell to the north and west of the Lake. Rainfall amounts to the east, and south of the Lake tended to be lower (Figure 3).

Based on USACE reported values, current Lake inflow is approximately 5367 cfs consisting of flows as indicated below.

Structure	Flow cfs
S65E	2003
S154	58
S84 & 84X	727
S71	944
S72	121
C5	0.
S191	414
S133 PUMPS	0
S127 PUMPS	0
S129 PUMPS	0
S131 PUMPS	47
S135 PUMPS	0
Fisheating Creek	1053
S2 Pumps	0
S3 Pumps	0
S4 Pumps	0

There are no reported Lake outflows and the L8 structure is reporting a small flow (11 cfs) back into the Lake. Average corrected evapotranspiration this past week was equivalent to an outflow of 3400 cfs. Change in elevation equivalents and average weekly flows for major structures are presented in Figure 4.

August chlorophyll and microcystin LR values are reported in Figure 5. No chlorophyll concentrations approaching bloom conditions were noted. However, two sites at the northern end of the Lake had slightly elevated microcystin LR values. The most recent MODIS satellite image (August 11) (Figure 6) indicates low to moderate chlorophyll values throughout much of the nearshore zone and extending out into the pelagic zone in several places. The imagery is consistent with field scientists' reports of widespread "green water" conditions throughout much of the Lake.

Water Management Recommendations

The summer increase in Lake levels began again this week. However, the Lake remains below the optimal stage for this time of year. Future recommendations for the short term will depend in large measure on wet season rainfall patterns and amounts. The operational goal is to maintain a steady increase in Lake stage, not to exceed 0.5 feet per month (0.125 feet/week) throughout the wet season.

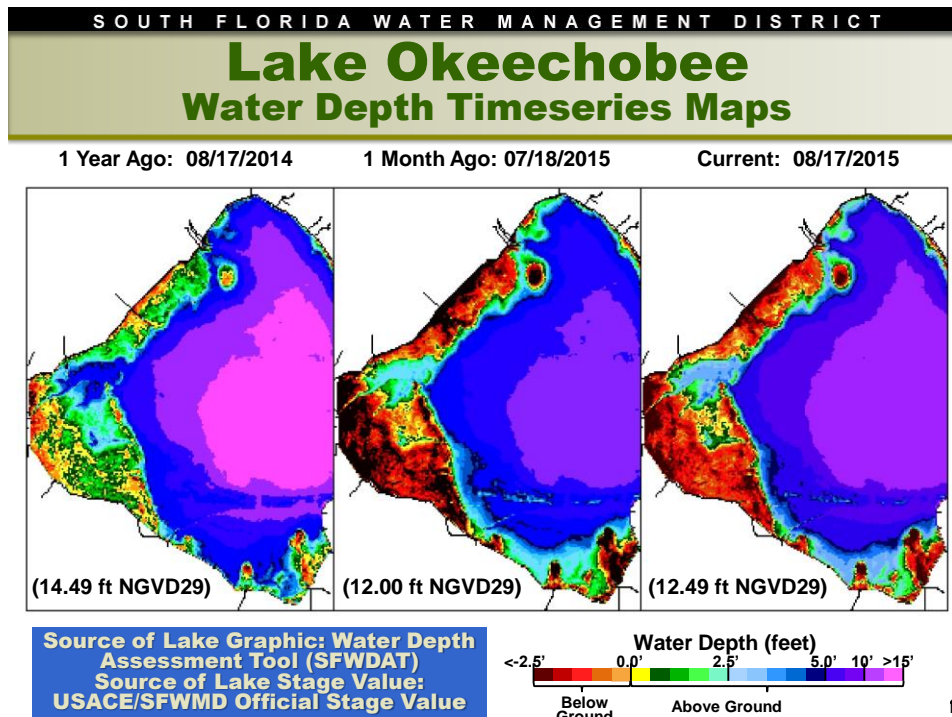


Figure 1

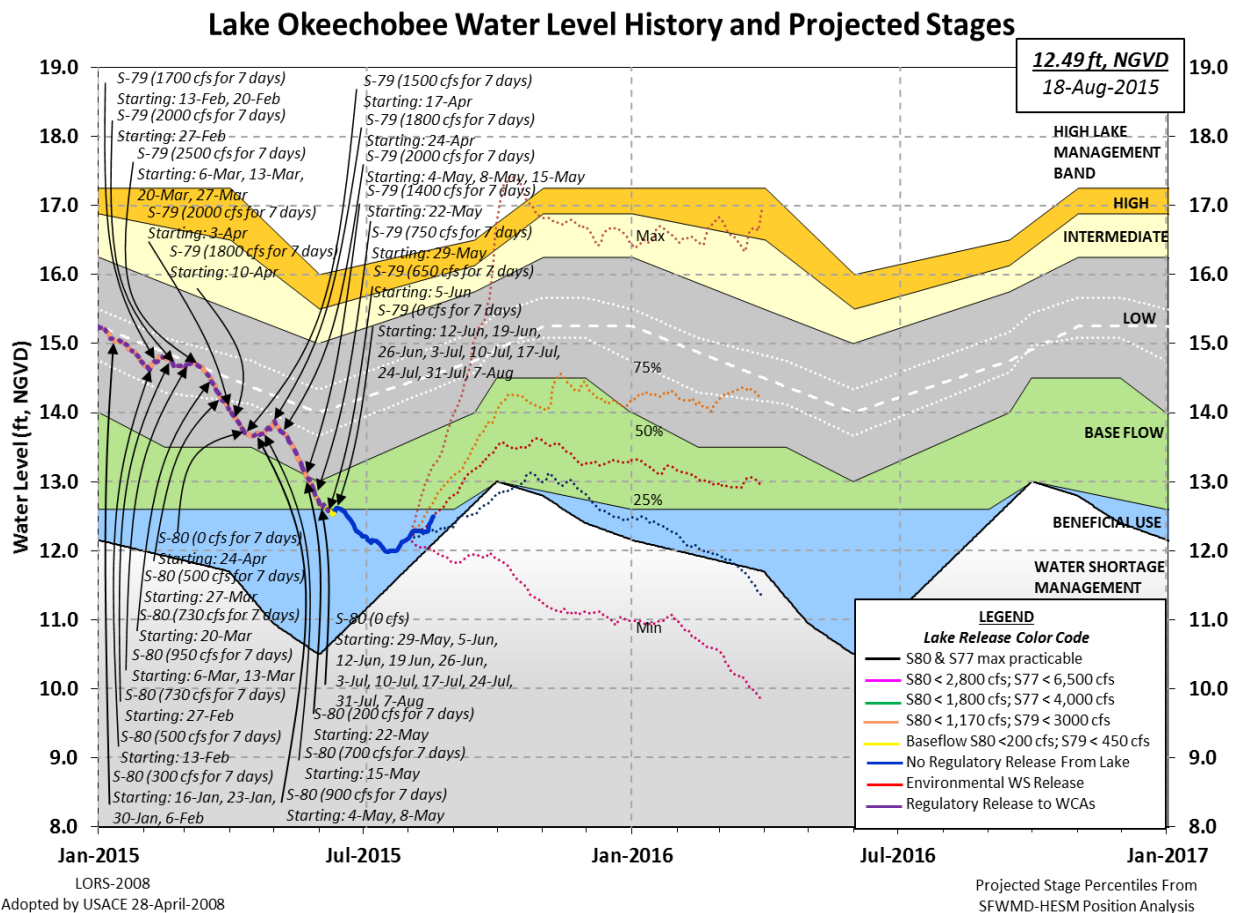


Figure 2

SFWMD PROVISIONAL RAINDAR 7-DAY BASIN RAINFALL ESTIMATES

FROM: 0215 EST, 08/11/2015

THROUGH: 0215 EST, 08/18/2015

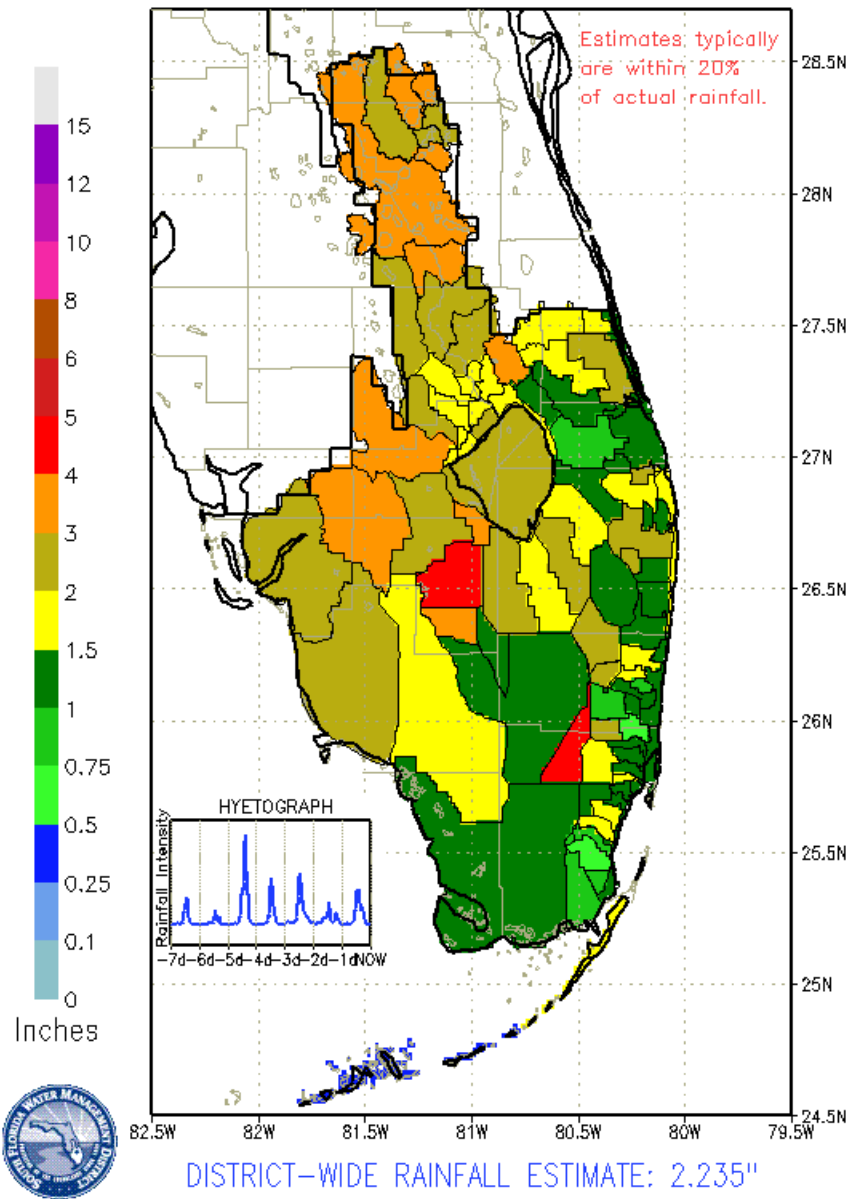
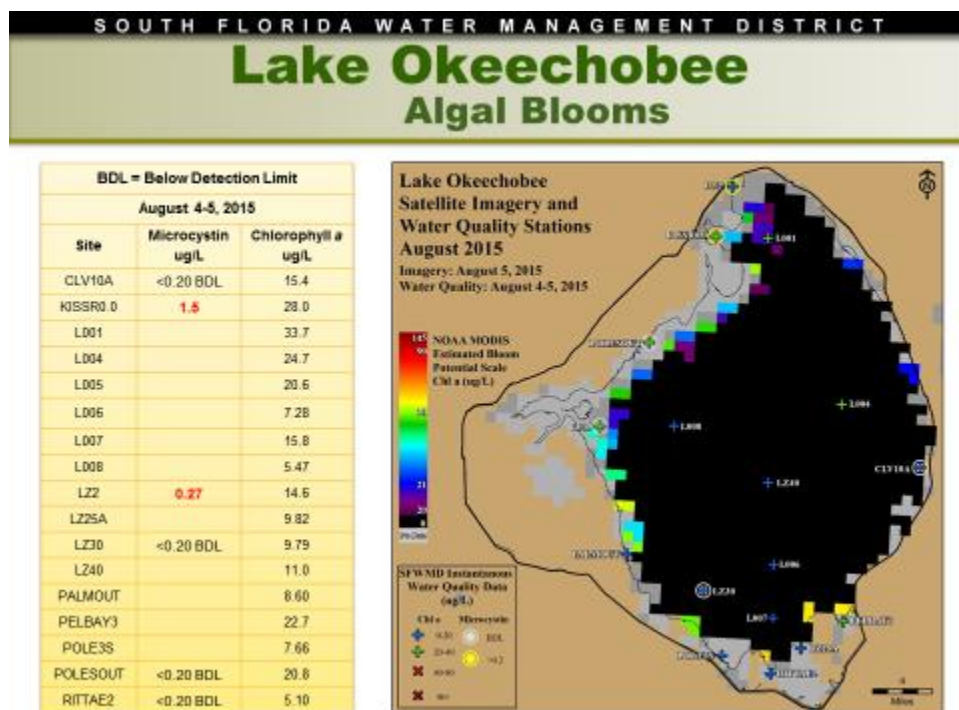


Figure 3

INFLOWS	Average Daily Flow Past Week cfs	Feet of Change Past Week
S65E	1648	0.062
S71 & 72	0	0.013
S84 & 84X	1648	0.036
Fisheating Creek	529	0.020
Rainfall	N.A.	0.172
OUTFLOWS	Average Daily Flow Past Week cfs	Feet of Change Past Week
S77	0	0.000
S308	0	0.000
S351	0	0.000
S352	0	0.000
S354	78	0.003
L8	64	0.002
ET	3400	0.128

Figure 4



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Lake Okeechobee

Algal Blooms

Unvalidated Data

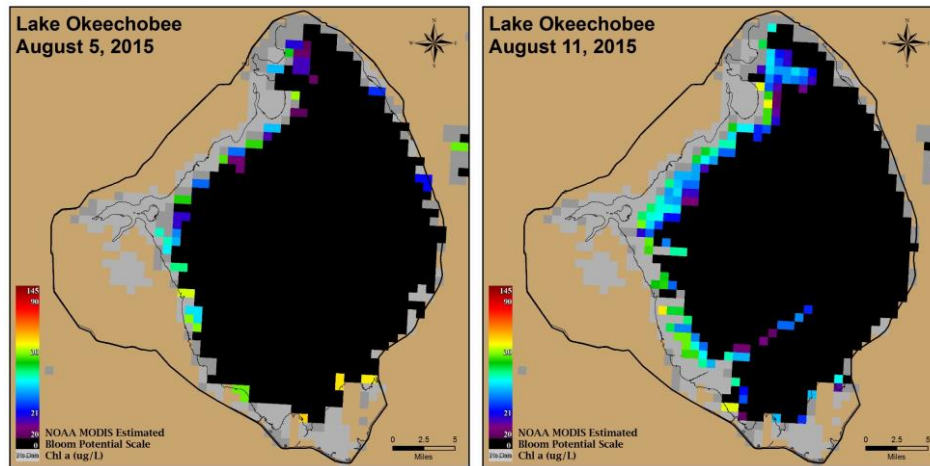


Figure 6

Lake Istokpoga

Lake Istokpoga stage is 38.29 feet NGVD today and is currently 0.09 feet below its regulation schedule (38.38 feet NGVD) which is now undergoing its annual rise to high pool stage (Figure 7). Average flows into the Lake from Arbuckle and Josephine creeks were 277 and 234 cfs respectively, a net increase from last week. Average discharge from S-68 and S-68X this past week was 910 cfs, roughly double the rate of the preceding week. According to RAINДАР, 2.9 inches of rain fell in the Lake Istokpoga watershed during the past seven days.

August 11 satellite imagery for Lake Istokpoga (Figure 8) indicated moderate chlorophyll concentrations over much of the Lake and a potential bloom in the western region of the Lake.

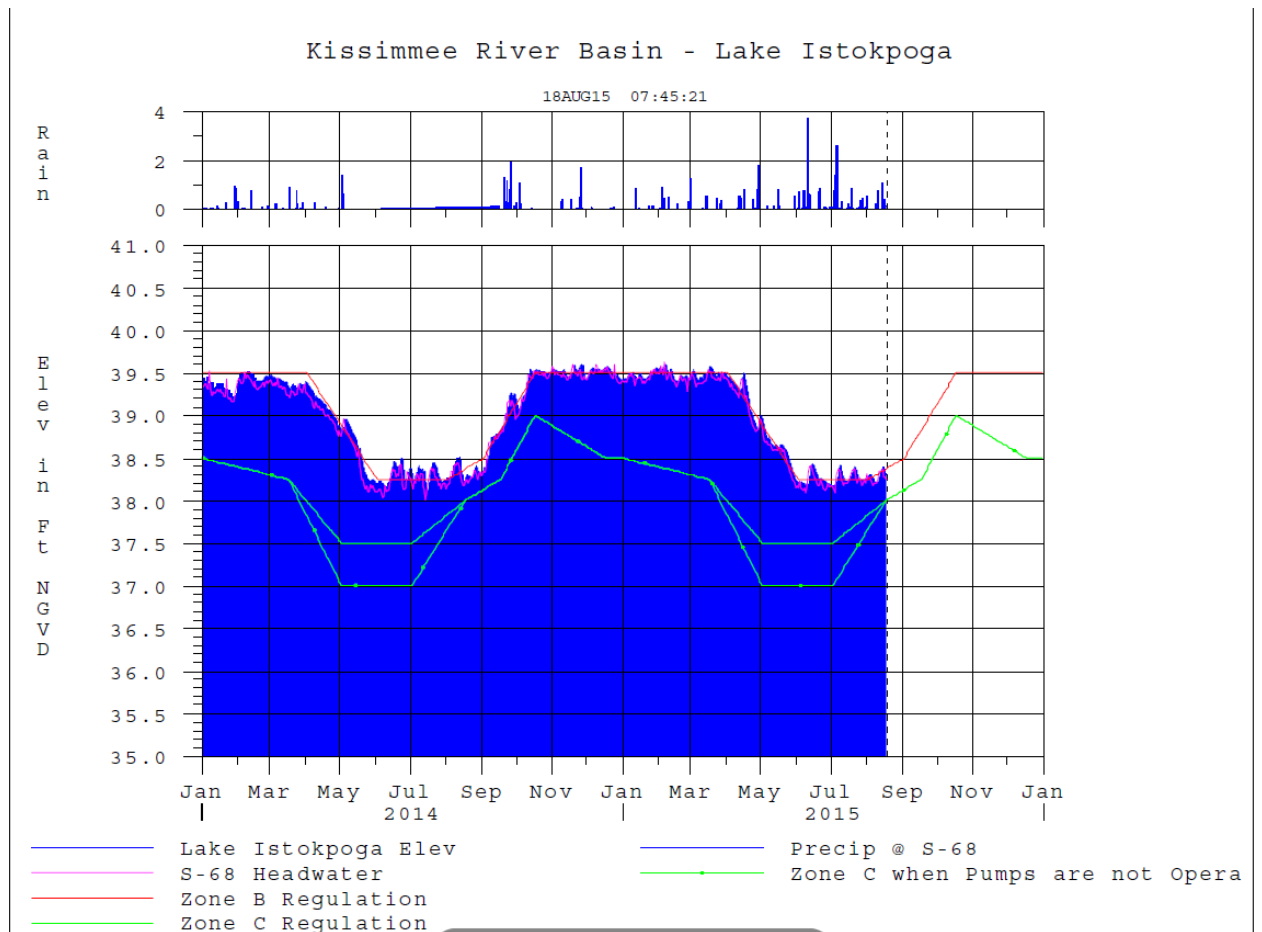


Figure 7

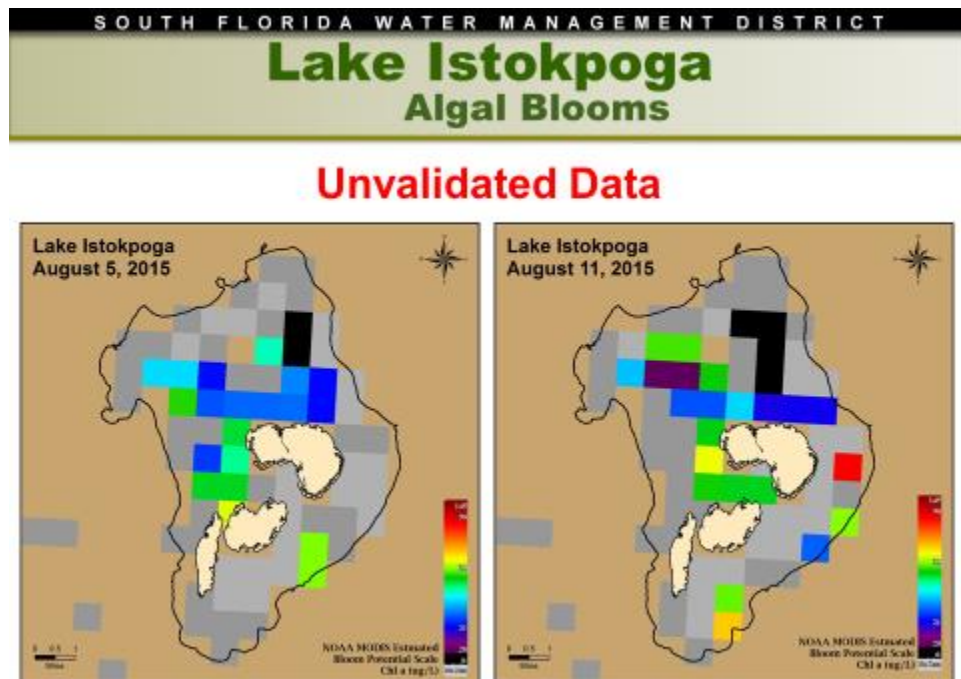


Figure 8

ESTUARIES

St. Lucie Estuary

Over the past week, provisional flows averaged 0 cfs at S-80, 0 cfs at S-308, 105 cfs at S-49 on C-24, 49 cfs at S-97 on C-23, and 257 cfs from Ten Mile Creek at the Gordy Road Structure. Average inflow from tidal basin tributaries is estimated to be 499 cfs (Figures 1 and 2). Total inflow averaged 910 cfs last week and 788 cfs over last month.

Over the past week, salinity increased slightly throughout the estuary (Table 1, Figures 3 and 4). The seven-day moving average salinity of the water column at the US1 Bridge is 18.2. Salinity conditions in the middle estuary are in the good range for the adult eastern oyster.

Table 1. Seven-day average salinity at three monitoring stations in the St. Lucie Estuary. Current average is in bold face type, previous average in parentheses. The envelope reflects the preferred salinity range for adult eastern oysters (*Crassostrea virginica*) in the middle estuary.

Sampling Site	Surface	Bottom	Envelope
HR1 (N. Fork)	~ 13.0 (~10)	NR (NR)	NA ¹
US1 Bridge	17.5 (16.0)	18.9 (17.8)	10.0-26.0
A1A Bridge	25.4 (24.4)	28.2 (28.1)	NA

¹Envelope not applicable

Caloosahatchee Estuary

During the past week, provisional flows averaged approximately 0 cfs at S-77, 338 cfs at S-78, and ~1400 cfs at S-79 (with missing data at S-79). Average inflow from tidal basin tributaries is estimated to be 2052 cfs (Figures 5 and 6). Total inflow averaged ~3452 cfs last week and 3469 cfs over last month.

Salinity remained about the same as last week throughout the estuary (Table 2, Figures 7 and 8). The seven-day average salinity values are within the good range for oysters at Shell Point and Sanibel, but within the fair range at Cape Coral (Figure 9). The 30-day moving average surface salinity is 0.3 at Val I-75 and 0.7 at Ft. Myers. Salinity conditions at Val I-75 are in the good range for tape grass.

Table 2. Seven-day average salinity at six monitoring stations in the Caloosahatchee Estuary. Current average is in bold face type, previous average in parentheses. The envelope reflects the preferred salinity range for tape grass (*Vallisneria americana*) at Val I-75 and for adult eastern oysters (*Crassostrea virginica*) elsewhere.

Sampling Site	Surface	Bottom	Envelope
S-79 (Franklin Lock)	0.2 (0.2)	0.2 (0.2)	NA ¹
Val I75	0.3 (0.2*)	0.3* (0.2*)	0.0-5.0 ²
Ft. Myers Yacht Basin	0.3 (0.3)	0.3 (0.3)	NA
Cape Coral	5.5 (4.4)	6.6 (5.9)	10.0-30.0
Shell Point	19.6 (17.8)	20.7 (19.4)	10.0-30.0
Sanibel	27.3 (25.8)	28.3 (27.2)	10.0-30.0

¹Envelope not applicable, ²Envelope is based on a 30-day average.

*Val I75 is temporarily offline due to bridge construction.

Salinity values are estimated using models developed for the site.

Salinity forecasts during the next two weeks were constructed for the following two scenarios of flow at S-79: a) no release (Figure 10), and b) 450 cfs pulse release. Due to high levels of flow from the

watershed, the predicted daily salinity and the 30-day moving average at the Val I75 location would be 0.3 for both cases by September 1, 2015.

Monitoring data collected by the River, Estuary and Coastal Observing Network of Sanibel-Captiva Conservation Foundation using continuous sensors are summarized in Table 3 as concentration ranges of Chlorophyll *a* and dissolved oxygen at Beautiful Island, Ft. Myers, and Shell Point in the Caloosahatchee Estuary.

Table 3. Weekly ranges of Chlorophyll *a* (a measure of algal biomass) and dissolved oxygen concentrations at three monitoring stations maintained by the Sanibel-Captiva Conservation Foundation.

	RECON Monitoring Stations		
	Beautiful Island	Ft. Myers	Shell Point
Chlorophyll <i>a</i> (µg/l)	NA	NA	2.0 – 7.8
Dissolved Oxygen (mg/l)	NA	NA	3.3 – 6.6

The Florida Fish and Wildlife Research Institute reported on August 13, 2015, that *Karenia brevis*, the Florida red tide organism, was not detected in samples collected throughout southwest Florida this week.

Water Management Recommendations

Lake Okeechobee's water level is within the Beneficial Use Sub-band; the tributary hydrological conditions are Wet; and the seasonal and multi-seasonal forecasts are Very Wet and Wet, respectively. The current and forecasted 30-day average salinities at the Val-I75 site are below the 5 psu threshold within the next two weeks. The Lake Okeechobee Regulation Schedule (LORS) and Lake Okeechobee Adaptive Protocols (LOAP) prescribe no Lake releases at either S-80 or S-77.

Currently, the USACE is not releasing water from Lake Okeechobee to the Caloosahatchee and St. Lucie estuaries. Local basin runoff is more than sufficient to maintain salinity within the preferred ranges of oysters and submerged aquatic vegetation in both estuaries. There are no ecological benefits associated with additional releases from Lake Okeechobee.

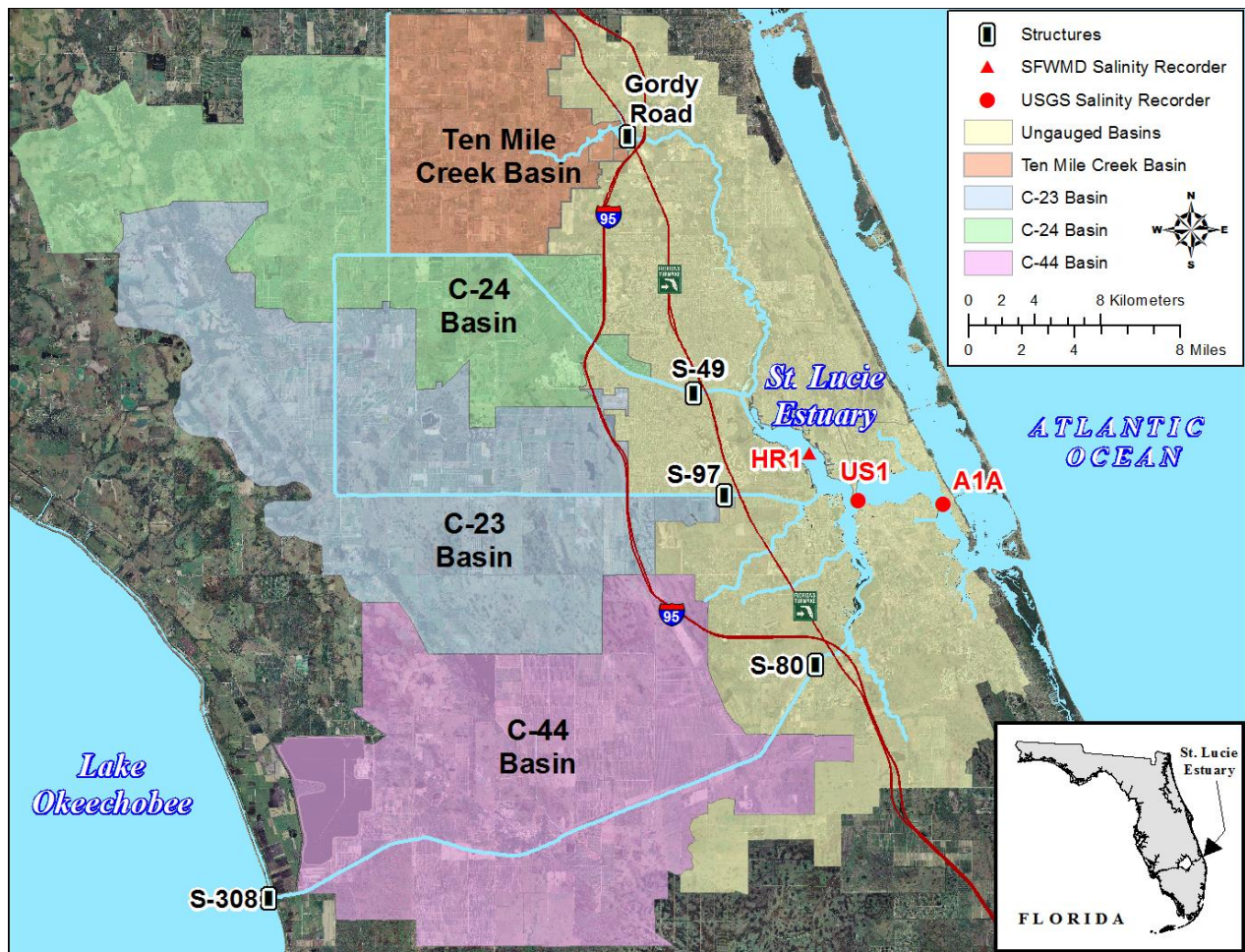


Figure 1. Basins, water control structures, and salinity monitoring for the St. Lucie Estuary.

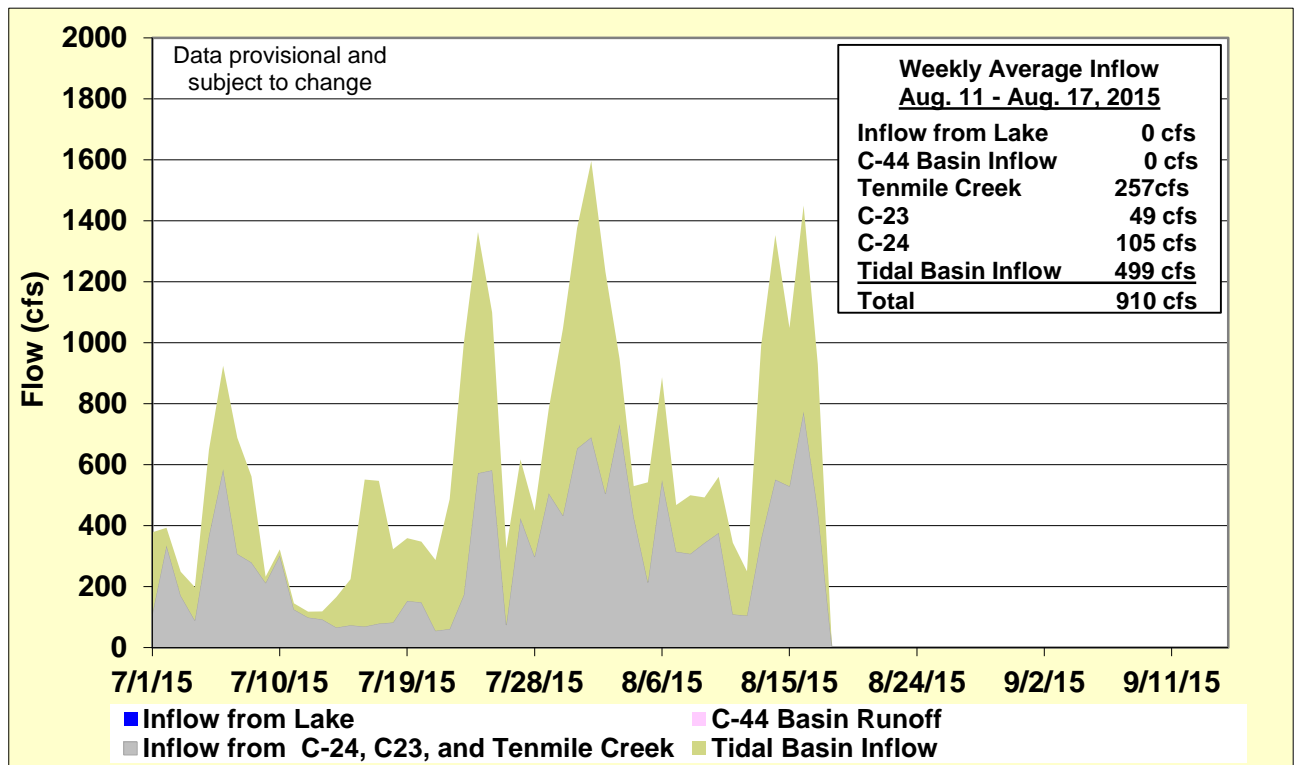


Figure 2. Estimated surface freshwater inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and tidal basins into the St. Lucie Estuary.

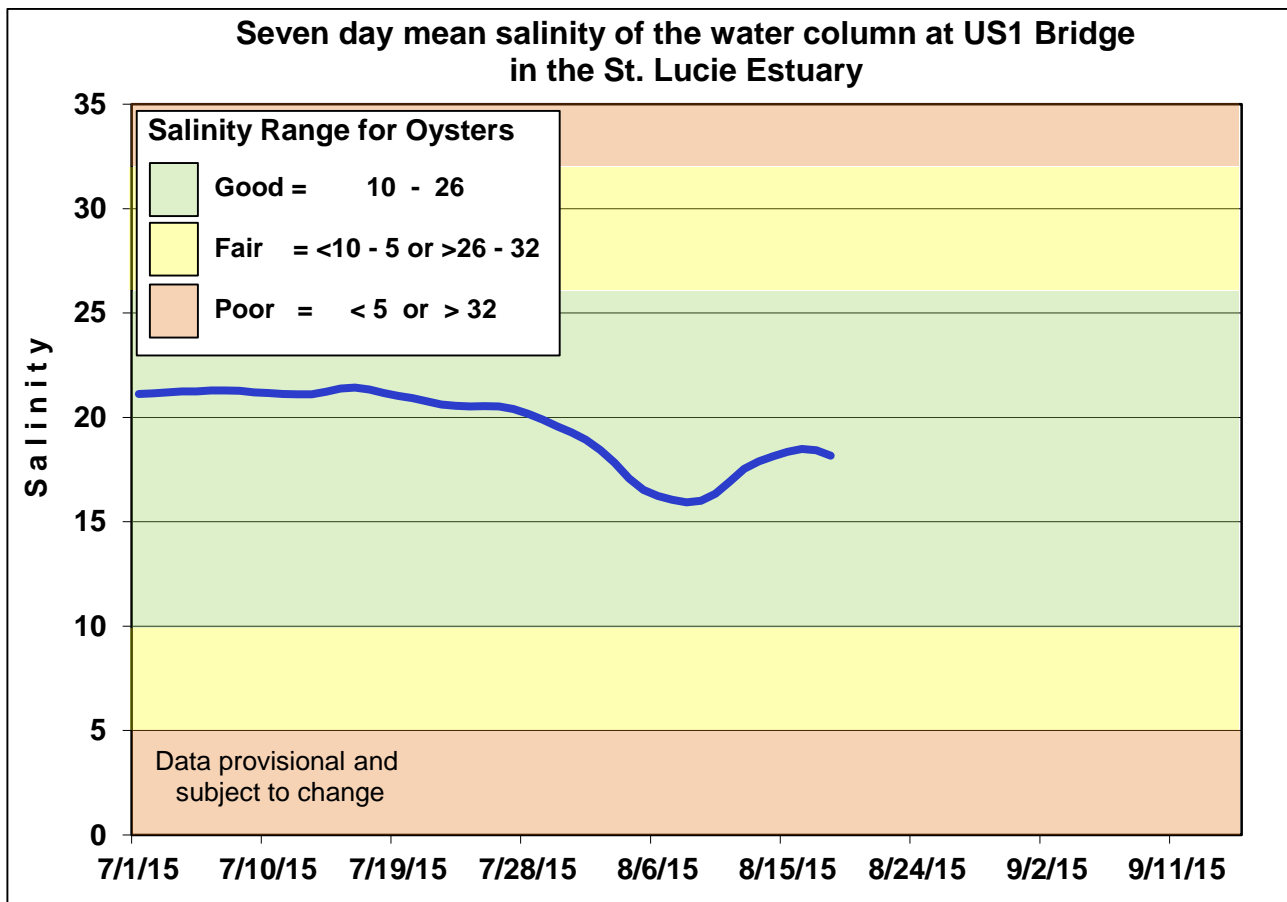


Figure 3. Seven-day mean salinity of the water column at the U.S. Highway 1 Bridge.

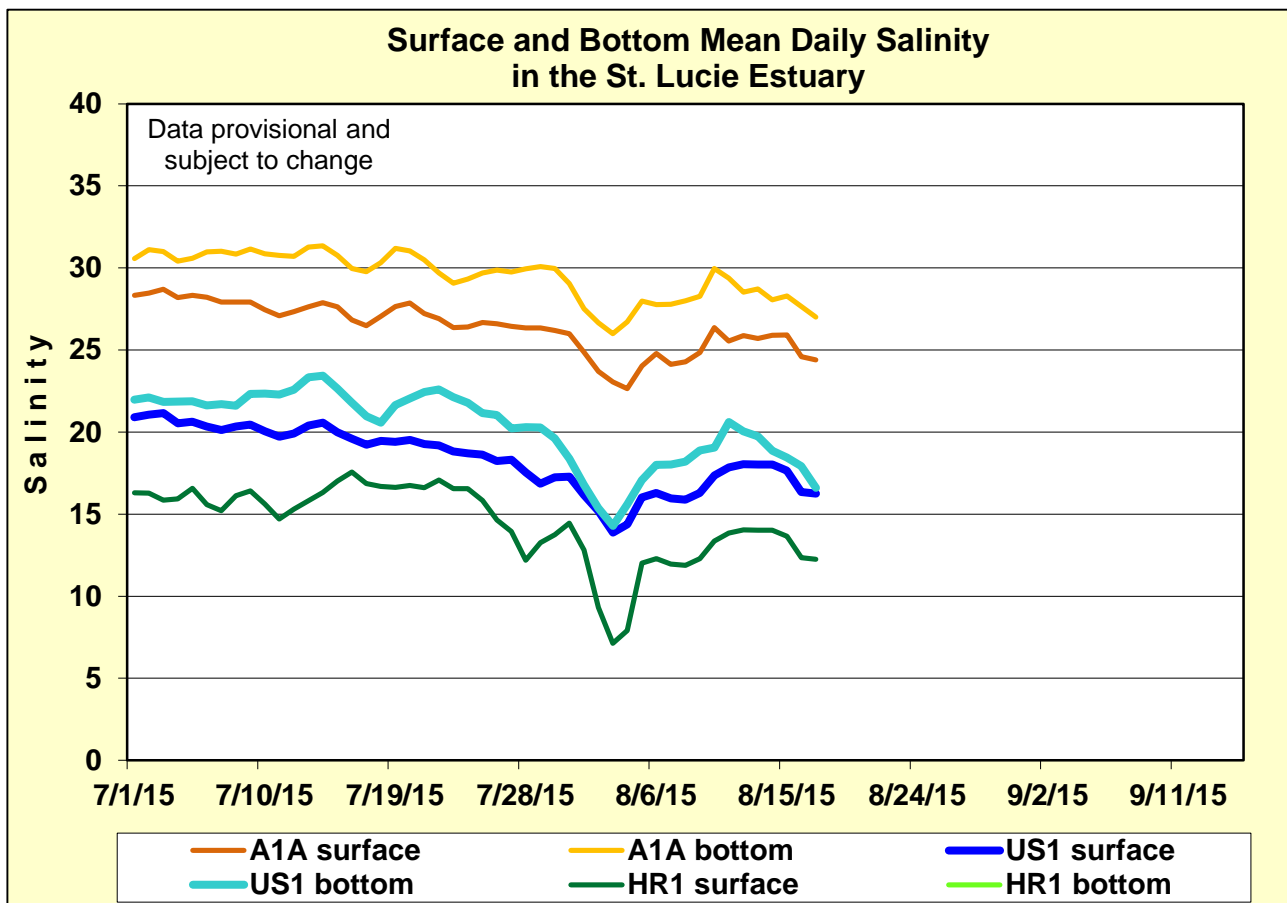


Figure 4. Daily mean salinity at the A1A, US1 and estimated HR1 stations.

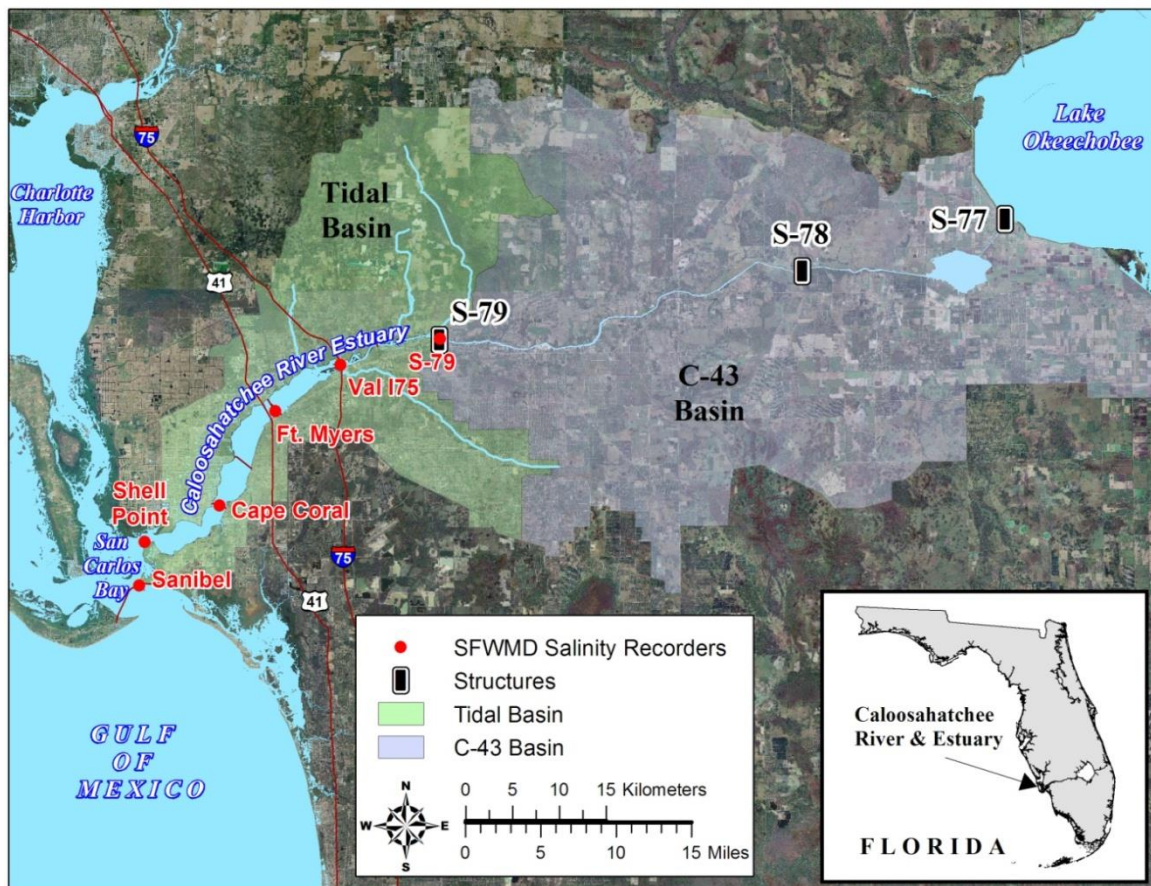


Figure 5. Basins, water control structures, and salinity monitoring for the Caloosahatchee Estuary.

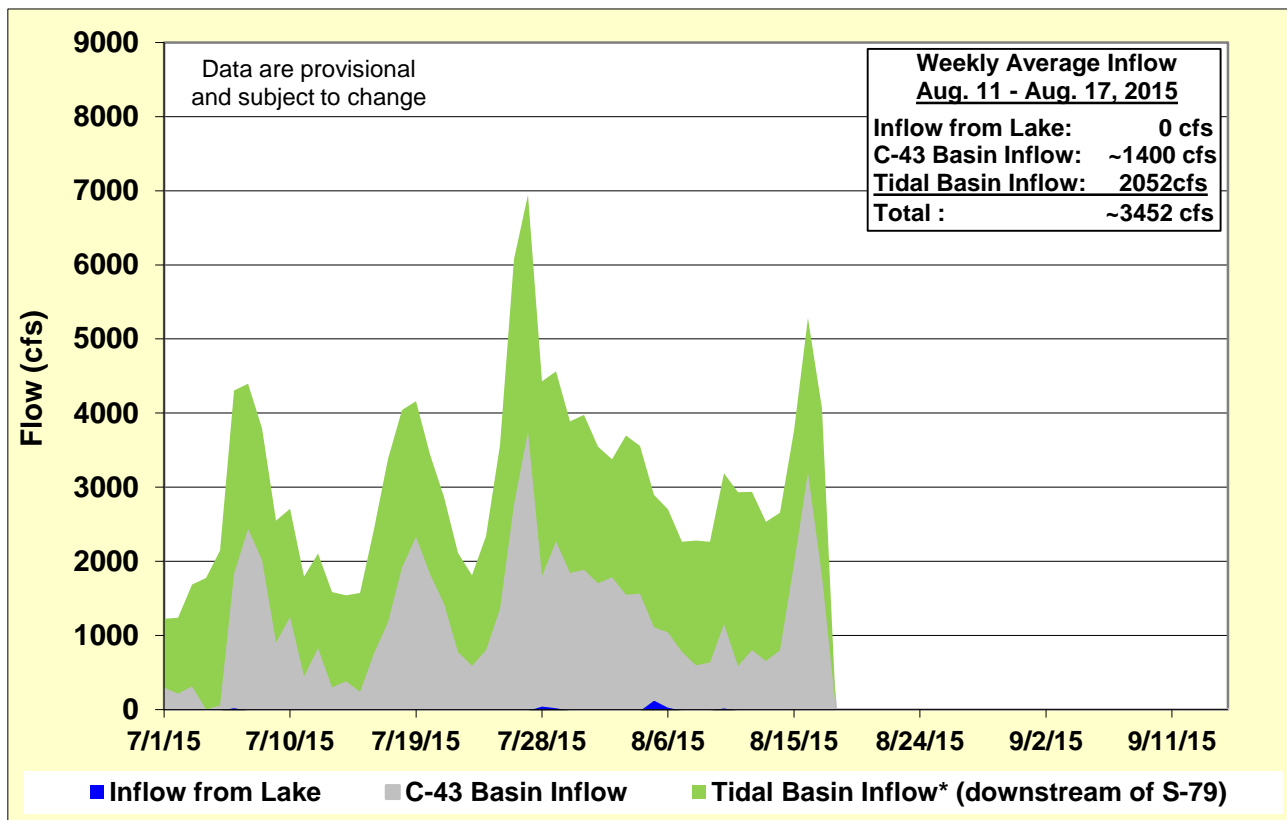


Figure 6. Surface freshwater inflows from Lake Okeechobee, runoff from the C-43 basin, and tributaries in the tidal basin into the Caloosahatchee River Estuary.

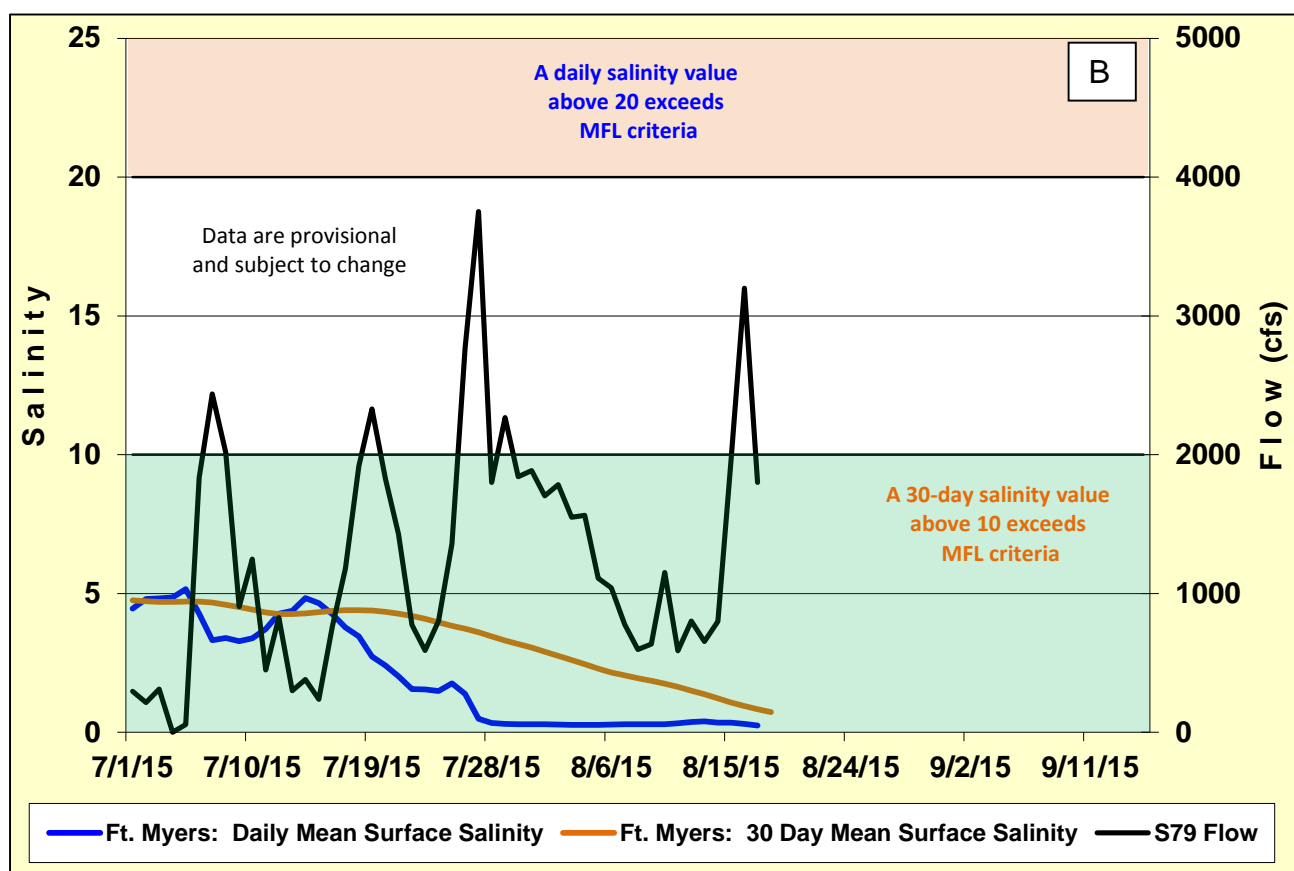
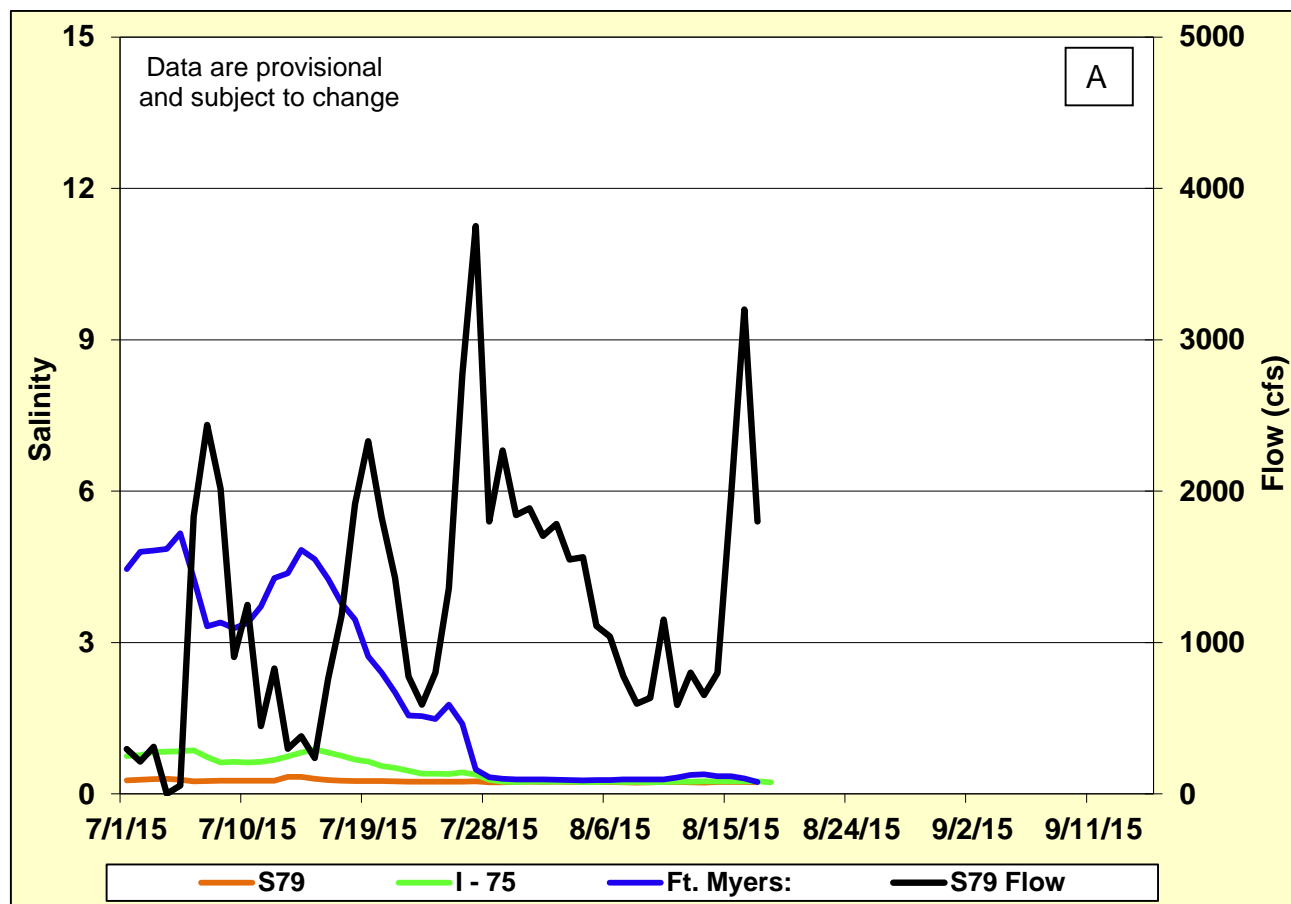


Figure 7. Daily mean flows at S-79 and salinity at upper estuary monitoring stations (A) and 30-day moving average salinity at Ft. Myers (B).

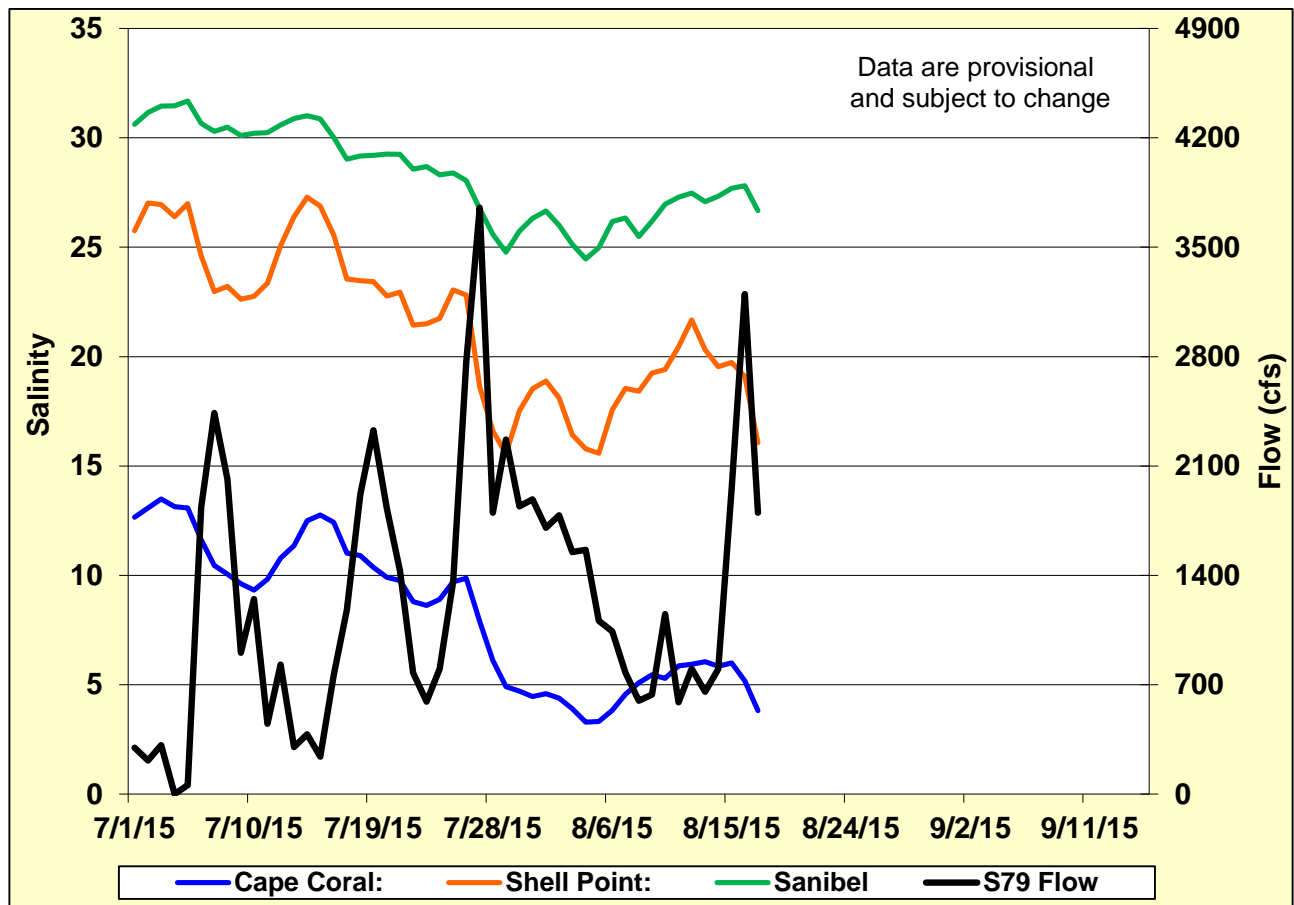


Figure 8. Daily mean flows at S-79 and salinity at lower estuary stations.

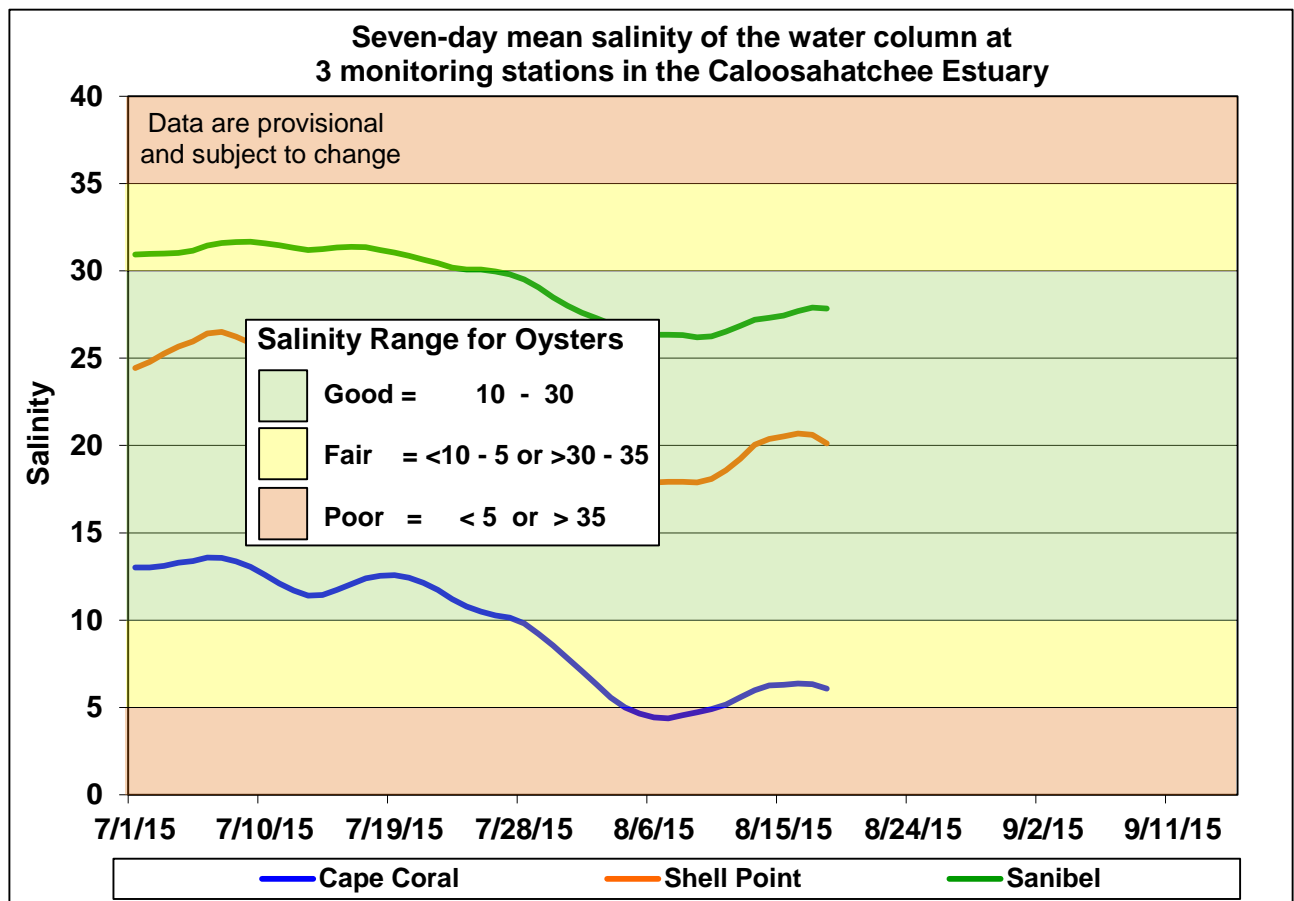


Figure 9. Seven-day mean salinity at Cape Coral Bridge, Shell Point and Sanibel Bridge monitoring stations.

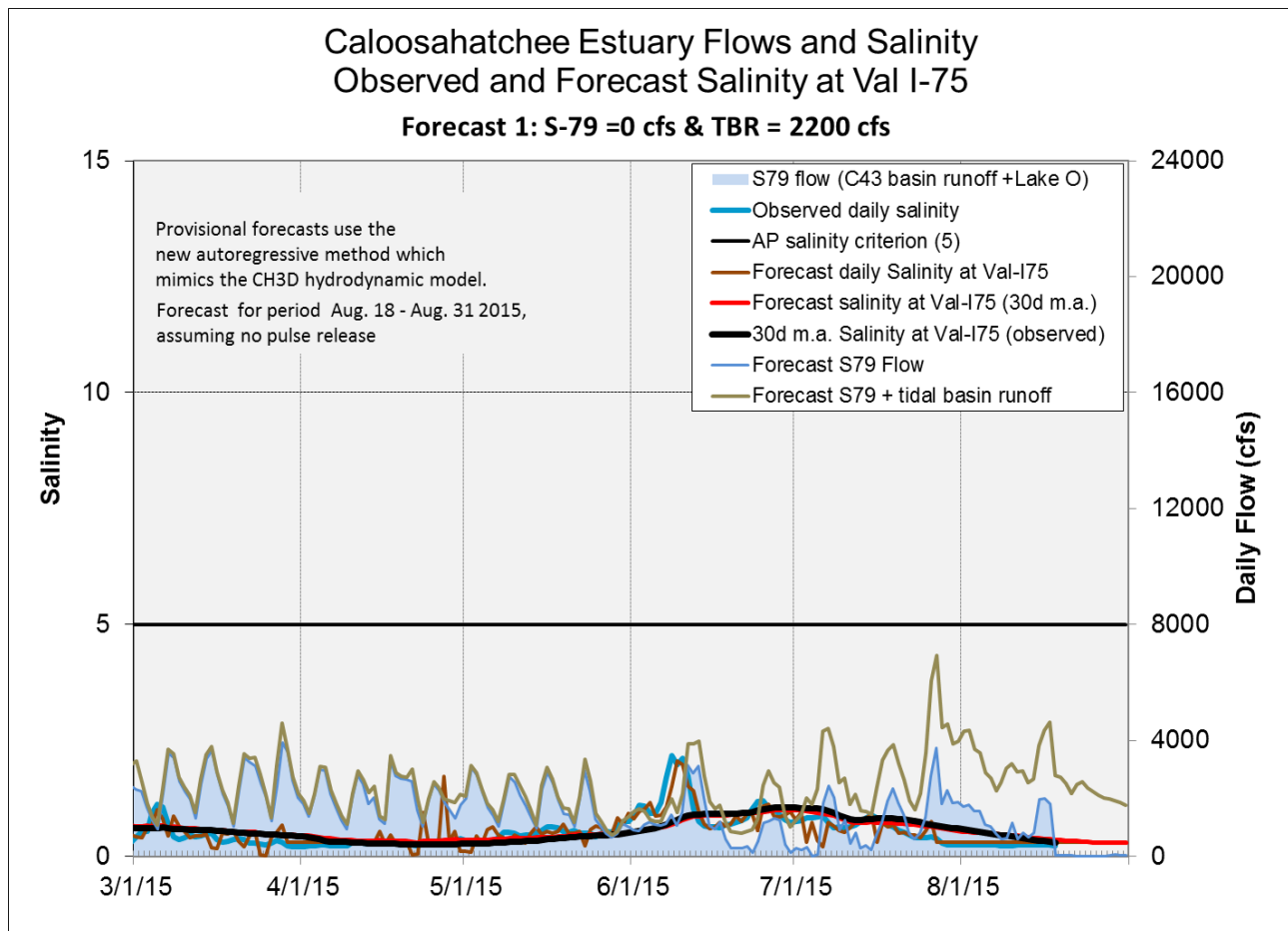
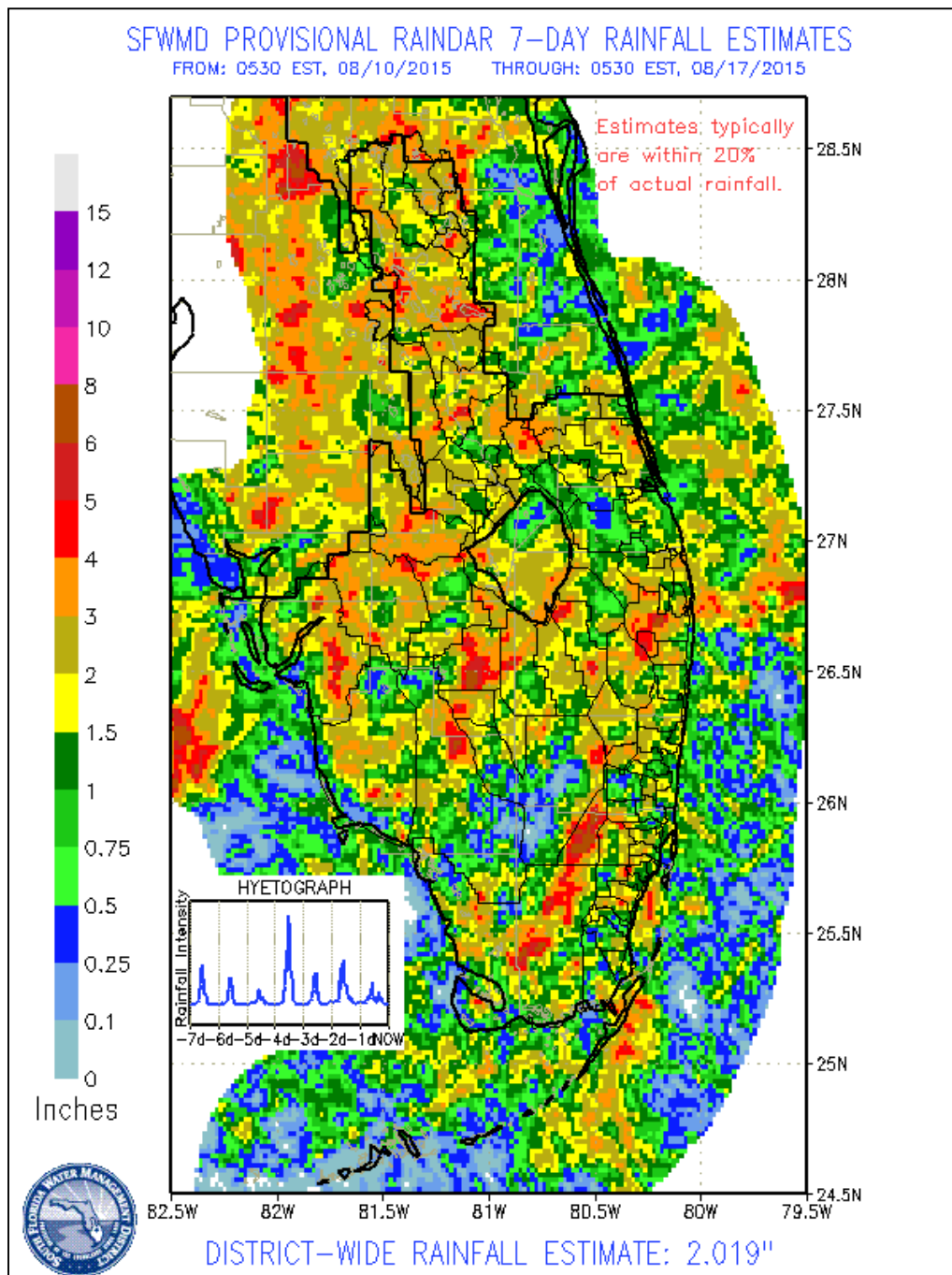


Figure 10. Two-Week Salinity Forecast for Caloosahatchee Val I-75 location assuming 0 cfs flow from S-79.

GREATER EVERGLADES

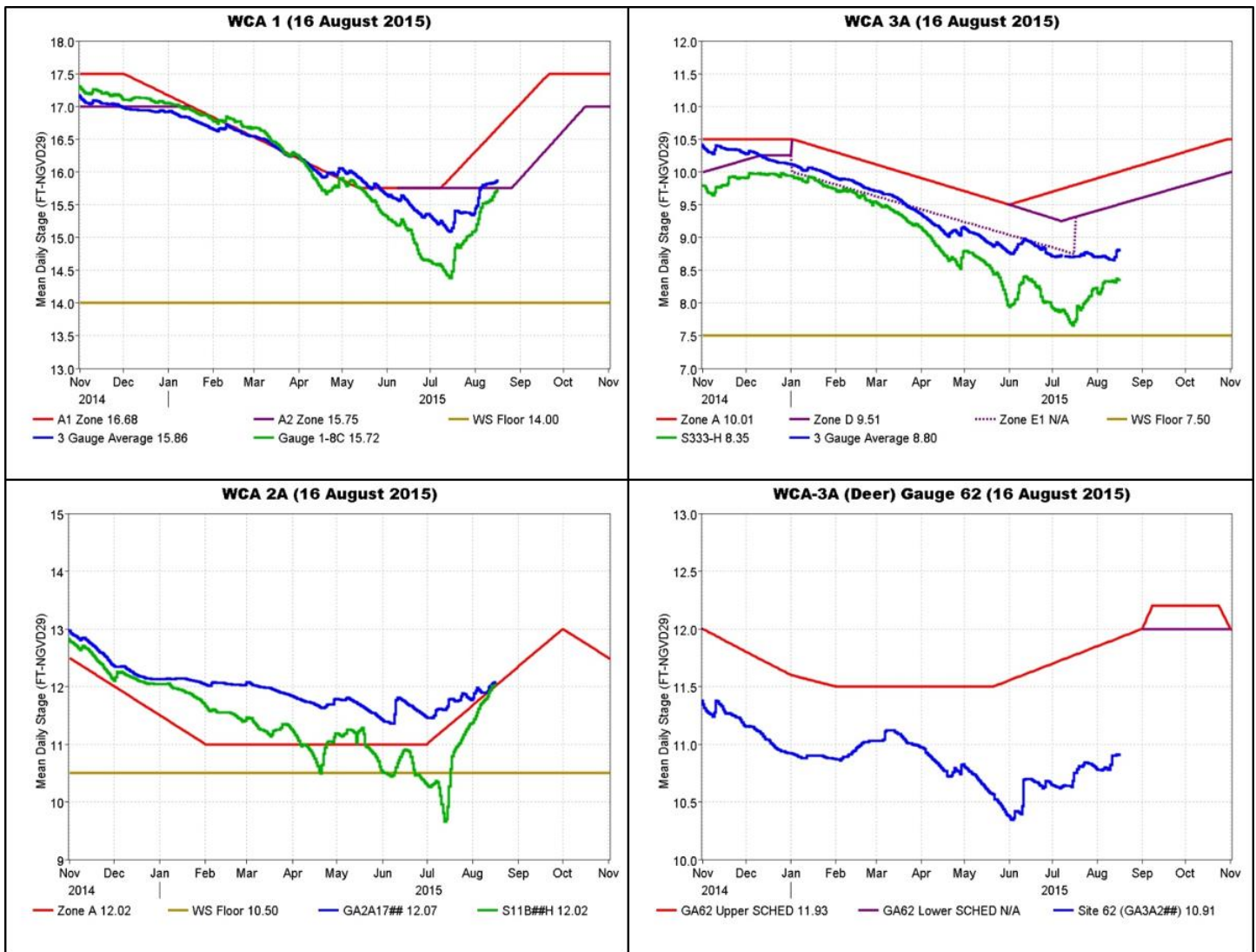
Localized Everglades rainfall was moderate to high. Basin averages ranged from a high of 4.3 inches in WCA-3B to 1.27 inches in WCA-3A. The local basin maximum rainfall was 7.56 inches over Shark River Slough in Everglades National Park. Pan evaporation was 1.50 inches, higher than the 1.39 inches pre-project average.

Everglades Region	Rainfall (Inches)	Stage Change (feet)
WCA-1	2.27	0.05
WCA-2A	2.17	0.19
WCA-2B	2.73	0.59
WCA-3A	1.27	0.13
WCA-3B	4.30	0.30
ENP	1.87	0.32



Regulation Schedules

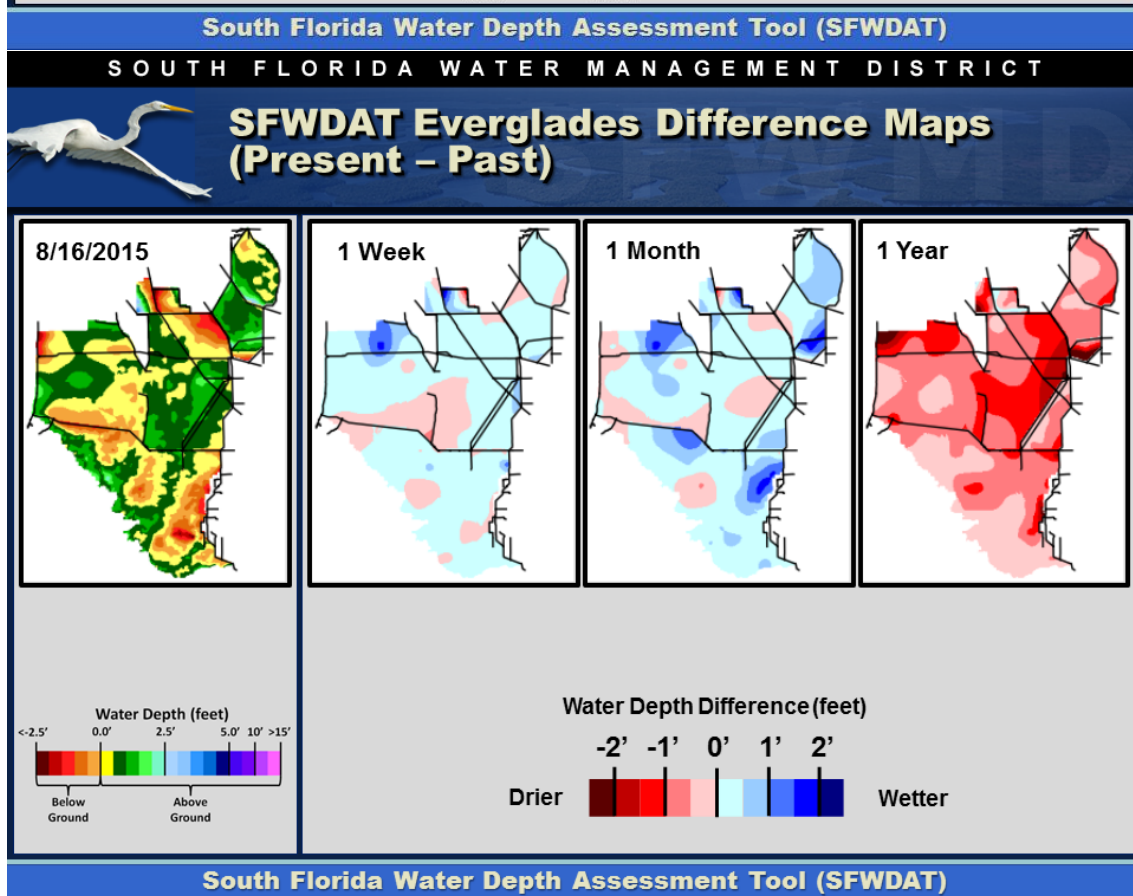
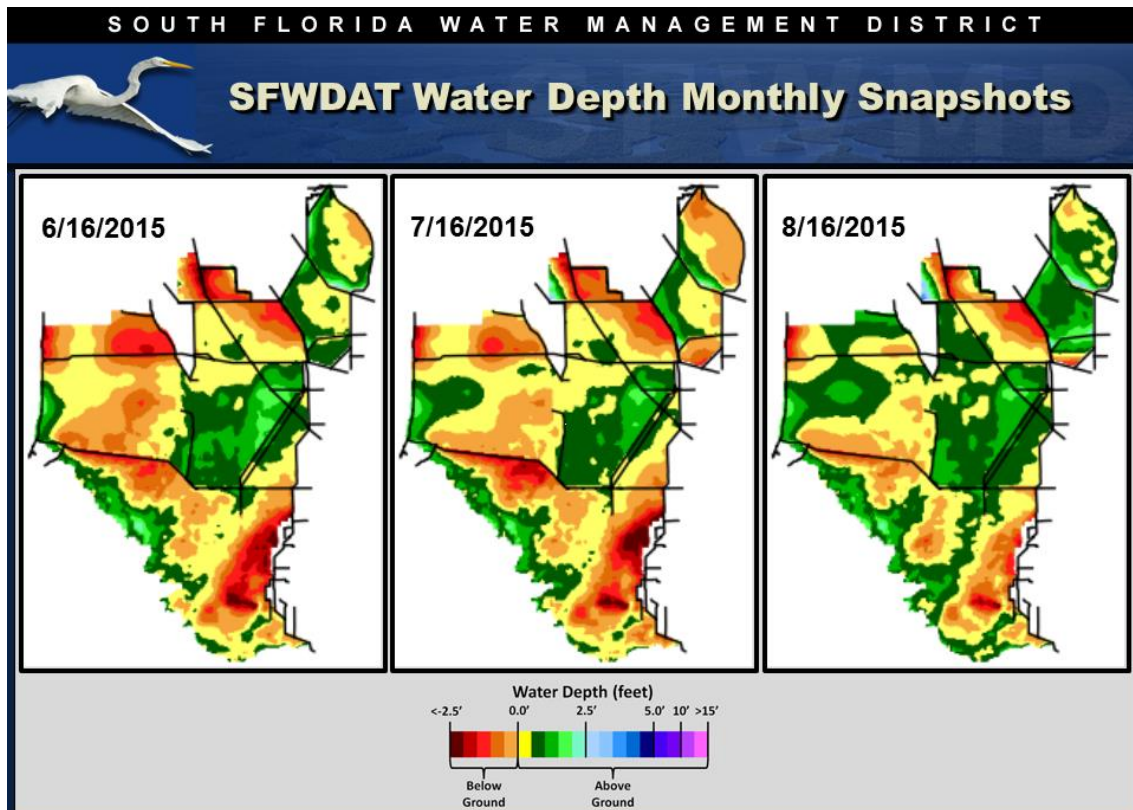
Most stages are low for this time of year, but stages increased, at least slightly, at all of the monitored gauges in the WCAs. In WCA-1, the three-gauge average in the wetlands is now 0.11 feet above the Zone A2 line. The WCA-2A stage increased to 0.05 feet above regulation. In WCA-3A, stages remain very low; the three-gauge average is 0.71 feet below Zone D and 1.21 feet below regulation. The water level at the northwestern WCA-3A gauge stage (gauge 62) is 1.02 feet below the upper regulation schedule.



Water Depths and Changes

Water levels are higher than a month ago and higher than two months ago, but are still much lower than usual at this time of the wet season. Stages at the monitored gauges range from -1.62 feet (WCA-2B) to 1.22 feet (southern WCA-3A). The stage at gauge 63 in northeastern WCA-3A increased to -0.22 feet below ground, but north of there is still even drier.

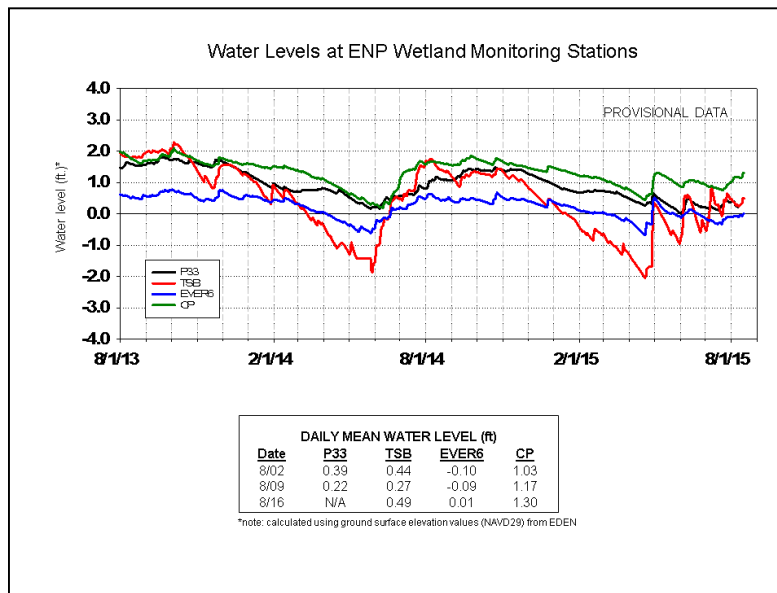
Stages are generally higher than a week and a month ago, but stages are still drier (<1.0 feet) to much drier (>2.5 feet) than a year ago. Stage gauge changes were all increases and ranged from 0.02 feet in WCA-3A to 0.59 feet in WCA-2B.



Cape Sable Seaside Sparrow: Nesting appears to be complete in the three monitored subpopulations.

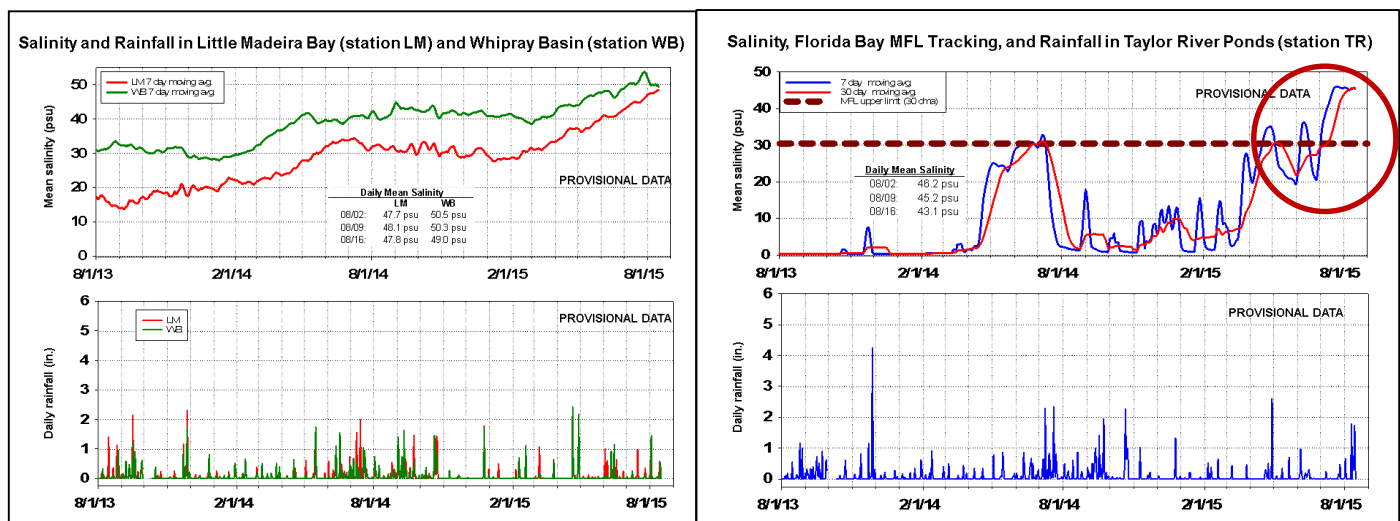
Everglades National Park (ENP) and Florida Bay

Water levels rose over the past week as a result of the rainfall. Compared to the long-term averages, which are rising at this time of year, water levels are still 3-6 inches lower than average in southern Taylor Slough and the ENP panhandle. The site at TSB in northern Taylor Slough is 11 inches below average for this time of year.

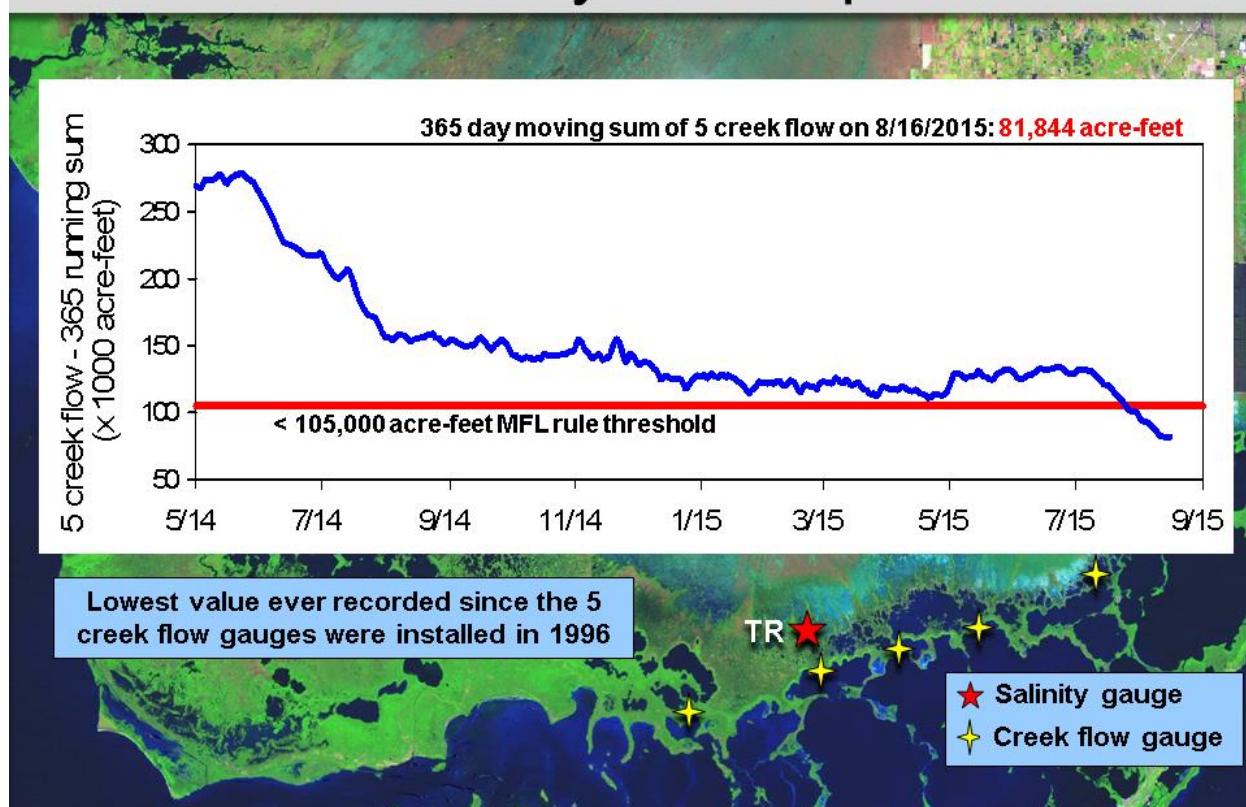


Salinities in Florida Bay remain elevated and are 11 to 30 psu above average for this time of year, and the lowest salinity is 44 psu. The central nearshore embayments remain above 50 psu while central Florida Bay has finally dropped below 50 psu to 49. This is the period of time when salinities are expected to be decreasing. The 30-day moving average salinity at the Florida Bay Minimum Flows and Levels sentinel site increased slightly to 45.6 psu

The 365-day running sum of the cumulative flow from five creeks feeding Florida Bay decreased again and, as of 8/16, is at 81,844 acre-feet, which is below the 105,000 acre-feet criteria for the Florida Bay MFL and is the lowest since the five gauges were started in 1996. Creek flow data are provisional data from the USGS.



Florida Bay Flow Update



Water Management Recommendations

- Water levels are far below what are needed in the Everglades and Florida Bay. Increased water is needed throughout the system, particularly in ENP to Florida Bay through Taylor Slough.
- We recommend targeting ascension rates of up to 0.25 feet per week (or 0.5 feet over two weeks to allow for large rain events) for the wet season to meet the end of wet season stage targets for environmental needs (prey species support, peat, and plant community needs).
- We continue to recommend releases into northeastern WCA-3A while conditions are very dry. Once water levels rise above ground, additional releases should no longer be needed. Gauge 63 is still 0.22 feet below ground and stages north of the gauge are over two feet below ground.
- Active nesting by the Cape Sable Seaside Sparrows appears to be finished for the year. Therefore, the request to delay opening the S-12A and S-12B structures no longer applies.

Site-specific recommendations appear in the summary table below. The red text represents new or modified information or recommendations.

Summary of Everglades Recommendations, August 18, 2015 (SFWMD) (red is new text)

Area	Current Condition	Cause(s)	Recommendation	Reasons
WCA-1	Stage increases ranged from 0.04' to 0.08'	Rainfall, ET, management	Target rainfall driven wetland stages at the top of Zone A2. Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species and to take advantage of rain events.
WCA-2A	Stage increased 0.19'	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days. High season target stage of 13 ft NGVD at 2-17 on Oct 1	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species and to take advantage of rain events.
WCA-2B	Stage increased 0.59'. Gauge EDEN-13 has rehydrated.	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	High stages preclude wading bird use, but provide good habitat for ducks.
WCA-3A NE	Stage increased 0.32'; gauge 63 is -0.22' below ground	Rainfall, ET, management	Strongly recommend releases into far NE 3A to protect peat and wetlands until water levels are above ground again. Average water stage of gauges 62 and 63 should remain under 11.60 feet. Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species in 3A, and also to allow taking advantage of rain events.
WCA-3A NW	Stage increased 0.12'	Rainfall, ET, management		
Central WCA-3A S	Stage increased 0.05'	Rainfall, ET, management	Move water into WCA-3A as much as possible. Season's dry conditions jeopardize peat and prey populations for the upcoming dry season conditions. Wet season target is 10.67 3AVG by Oct 30.	Promote native habitat and maintain wetland plant communities. Moderate ascension rates to protect habitats and sensitive species in 3A, and take advantage of rain events. Avoid or minimize discharge through S-12A and S-12B through at least August 15 and as long as possible to benefit Cape Sable seaside sparrow nesting and habitat conditions.
Southern WCA-3A S	Stage increased 0.02'	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	
WCA-3B	Stage increases ranged from 0.18' to 0.36'	Rainfall, ET, management	Recommend ascension rates up to 0.25 ft/wk, or 0.5 ft/14 days.	Promote native habitat and maintain wetland plant communities. Provide foraging habitat for wading birds.
ENP-SRS	Stage increased 0.32'	ET, rainfall, topography, management	Discharges to the Park with the ERTF rainfall plan. Water deliveries to Shark Slough should be made through S-333, then through S-12D and S-12C.	Promote native habitat and maintain wetland plant communities.
ENP-CSSS habitats	Nesting appears to be complete. Conditions are still fairly dry.	Rainfall, ET, management	Request for extended closures for S-12A and S-12B is ended.	Provide habitat and appropriate nesting conditions for CSSS.
Taylor Slough	3-11 inches below average.	Rain, ET, inflows	Move water southward as possible	Provide freshwater buffer for ecosystems and fresher saline conditions downstream
FB- Salinity	Hypersaline. Still 11-30 psu above average	Rain, ET, inflows, wind.	Move water southward as possible	Southward flows are still needed to reverse/slow salinity increases